

C
UTB
1909/10

COLLEGE BULLETINS.

Issued Quarterly, Vol. 10, No. 9.
December, 1910.

THE BIENNIAL REPORT
OF THE
BOARD OF TRUSTEES
OF THE
Agricultural College of Utah
For the Years 1909, 1910.

Accompanied by

The Report of the President, Departmental Reports and
the Secretary's Report of the Receipts
and Disbursements.

THE LIBRARY OF THE
MAR 9 1931
UNIVERSITY OF ILLINOIS

SALT LAKE CITY
TRIBUNE-REPORTER PRINTING CO.
1911

THE BIENNIAL REPORT
OF THE
BOARD OF TRUSTEES
OF THE
Agricultural College of Utah
For the Years 1909, 1910.

Accompanied by
The Report of the President, Departmental Reports, and
Secretary's Report of the Receipts
and Disbursements.

THE LIBRARY OF THE
MAR 9 1931
UNIVERSITY OF ILLINOIS.

SALT LAKE CITY
TRIBUNE-REPORTER PRINTING CO.
1911

CONTENTS.

1. The Biennial Report of the Board of Trustees.....	1
2. The Report of the President of the College.....	5
Policy	5
The Faculty	6
The Alumni	8
The Student Body.....	9
Organization of the College.....	14
School of Agriculture.....	15
School of Home Economics.....	19
School of Commerce	21
School of Mechanic Arts.....	23
School of General Science	24
The Extension Division.....	24
The Experiment Station.....	26
Miscellaneous Departments	28
Irrigation Engineering	29
Pavements and Street Car.....	30
Lands for Range Experiments.....	31
Mill Tax Support.....	32
A New Gymnasium.....	34
State Veterinarian	36
Heating Plant	36
Requirements and Income.....	36
3. Departmental Reports.	
School of Agriculture.....	39
School of Home Economics.....	44
School of Commerce.....	51
School of Mechanic Arts.....	53
School of General Science.....	57
The Extension Division.....	58
The Experiment Station.....	66
Department of Agronomy.....	75
Department of Animal Industry.....	80
Department of Art.....	82
Department of Bacteriology.....	85
Department of Chemistry.....	86
Department of English.....	91

Department of Geology and Mineralogy.....	94
Department of History.....	97
Department of Horticulture and Botany.....	99
Department of Irrigation and Drainage.....	103
Library	104
Department of Mathematics.....	107
Department of Military Science and Tactics.....	108
Department of Modern Languages.....	108
Department of Music.....	110
Department of Physical Education.....	111
Department of Physics.....	114
Department of Poultry Husbandry.....	116
Department of Veterinary Science.....	118
Department of Zoology and Entomology.....	120
Report of Superintendent of Buildings and Grounds..	123
Report of Head Janitor.....	125
Report of the Registrar.....	126
Students by Schools (1909-10).....	128
Students by Schools (1910-11).....	129
Institutions Represented on Faculty.....	130
Report of the Secretary.....	131
Appointments	132
Resignations	133
Trustees and Dates of Service.....	134
Report of Alumni Association.....	136
4. Biennial Report of the Secretary.....	162

THE BIENNIAL REPORT OF THE BOARD
OF TRUSTEES
OF THE
AGRICULTURAL COLLEGE OF UTAH,
FOR THE YEARS 1909 AND 1910.

To the Governor and Legislative Assembly of Utah:

The Board of Trustees of the Agricultural College of Utah have the honor to present herewith their report for the biennium from January 1st, 1909 to December 31st, 1910.

This period has been one of extraordinary prosperity for the College. The attendance has increased nearly one-half; the number of college students has nearly doubled; the Faculty has been strengthened; the extension work enlarged; the buildings repaired; the equipment slightly increased; a stock judging pavilion and a woman's building for the teaching of home economics have been constructed; the work of students and Faculty has been more thoroughly organized; the experimental work brought in touch with the immediate and permanent needs of the State; and a feeling of peace and permanency established, such as this Institution has not known for a decade and a half.

It is exceedingly gratifying to make this report, and to add that the prosperous condition of the Utah Agricultural College is due, next to the good-will of the people as expressed in the attendance of students, to the liberality of the last Legislature and the active support of the Governor and other administrative officers of the State. That the people of Utah really desire a strong institution of higher industrial learning is no longer to be questioned; the present consideration is the best method for supplying a need so vigorously expressed.

The difficulties of the biennium have naturally been those occasioned by the rapid influx of students, especially of college grade. The additional teachers required, involved a considerable expense; and it has become impossible to retain the best

men or secure new men of best ability, at the low salaries hitherto prevailing at this Institution. The growth of the College likewise called for a larger and more varied equipment, which for lack of funds, was answered only in part. Finally, the floor space of the Institution has become utterly inadequate for the needs of the present large student body. The Faculty and all employees have shown commendable loyalty in attempting to do the highest grade of work under the existing conditions of limited floor space and insufficient equipment.

In addition to the general maintenance, provision should be made at the earliest moment for a gymnasium and at least a wing of an agricultural building. We suggest that the gymnasium be provided for first, at this session of the Legislature, since it will not only relieve the congestion in the main College building, but will furnish the much needed opportunity for the proper physical development of the students.

In addition to the College requirements summarized below, we call your attention to the requirements of the Experiment Station and the Extension Division which may be found discussed in detail in the report of the Directors to the President of the College.

It has been our attempt to establish a policy under which Utah may be in possession of an Agricultural College worthy of comparison with the best in the land; yet which shall grow only in harmony with the general growth of the State; and the special purpose of which shall be the training of a citizenship for the development of the vast natural resources of our great State. The requests made for the next biennium are made with this policy in view. We recommend that the items of general maintenance be covered as in the past by a blanket appropriation, but that appropriations for new buildings be definitely specified.

After careful deliberation the estimated income and requirements of the Institution are as follows:

Estimated requirements and income of the Agricultural College of Utah for the biennium July 1st, 1911 to June 30th, 1913.

REQUIREMENTS

Salaries and wages (on the basis of 1910-1911)	\$163,000.00
Additions to Teaching Force and Salary Adjustments	12,000.00

Equipment (for all departments, including library and livestock) ..	35,000.00
Supplies, on basis of 1909-1910. (Including Mechanic Arts supplies, feed for livestock and supplies for all other departments.)	30,000.00
Light and Power	6,000.00
Fuel	10,000.00
Insurance	2,000.00
Printing and Advertising	5,000.00
Postage, stationery, telegraph, telephones, etc.	3,000.00
<i>Repairs and Improvements:</i>	
Painting (including renovation of furniture)	\$2,000.00
Steam heating (including new boiler)	3,500.00
Water-works and sewerage....	800.00
Hard finish and calcimining....	1,000.00
New floors and repairs on old..	1,500.00
New steps for stairways.....	400.00
Window-glass, blinds and locks.	500.00
Lighting system	800.00
Fencing and repairs.....	700.00
Roof for and raising Mechanic Arts Building	7,300.00
New roads (including cement walks)	1,500.00
Retaining wall for Woman's Building	500.00
Shed for Cattle yard	500.00
	<hr/>
	21,000.00
Total for Maintenance and Repairs.	<hr/> \$287,000.00

INCOME.

Morrill Fund (1862) (estimated) ..	15,000.00
Morrill Fund (1890)	50,000.00
Nelson Fund (1907)	50,000.00
Fees (estimated)	15,000.00
	<hr/>
Total Income	\$130,000.00

Total Amount Required from the Legislature for Maintenance and Repairs	\$157,000.00
--	--------------

NEW BUILDINGS.

Request is further made for new
buildings as follows:

Gymnasium and Drill Hall (estimated)	50,000.00
Greenhouse	2,500.00

We heartily approve of the recommendations made by the
President of the College in his report, and trust that the appro-
priations asked for may be granted.

Respectfully submitted,

LORENZO N. STOHL,

President, Board of Trustees,
Agricultural College of Utah.

December, 1910.

President's Report.

To the Board of Trustees of the Agricultural College of Utah:

Vigorous life and an unprecedented rate of growth have characterized the College in all its work during the biennium now closing. Alumni, Faculty and Students have labored with all their might, in their respective fields, to uphold and increase the good reputation of the Institution. The people of the State have shown their confidence in the school by enrolling in it their sons and daughters, and by attending, numerous, the extension meetings held in nearly every section of the State. The Governor and the other State administrative officers have constantly and at much personal sacrifice helped to make the College of greatest value to the citizens of Utah. Peace and permanency have led to a settled feeling among employees and friends. All in all the biennium of 1909-1911 has been exceedingly prosperous. It has been well demonstrated that Utah needs and demands a strong college of industrial education, such as, by law, is the Utah Agricultural College.

In the following pages will be found a brief history of the achievements and difficulties of the last two years and also statements of the needs of the coming biennium. The detailed reports of the departments, together with tables showing the condition of the Institution will be found in the Appendix.

POLICY.

The work of the Utah Agricultural College rests firmly upon the doctrine that the Institution has been created primarily for the needs of the masses of the people of the State—that it is the People's College. This carries with it the principle that all men in our free State shall have equal educational opportunities without being led away from the pursuits which of necessity the majority of men and women must follow. The growth of modern thought and science has made it possible to dignify, intellectually, the old occupations, such as agriculture, housekeeping,

A People's
College.

commerce and the trades, until they are comparable with the older professions of law, medicine and theology. The trades and the common occupations have in many cases risen to the dignity of professions. The policy of the Utah Labor is Life. Agricultural College, therefore, is to provide a modern education which will return to the State an educated citizenship, trained to set its hands to the development of the resources of the State, in any needed direction. The motto of the College has long been, Labor is Life; and the Institution is proud of its mission to dignify and beautify and make desirable all kinds of useful labor.

THE FACULTY.

The strength of an institution of learning lies in its faculty of instruction. In accordance with this belief much thought and effort have been expended in the attempt to advance the efficiency of the teaching corps of the Utah Agricultural College.

The system of land-grant colleges, of which the Utah institution is one, makes somewhat unusual demands upon its teachers. First, they must be possessed of deep, thorough and wide scholarship, and, secondly, they must be able to apply their knowledge to agriculture, housekeeping and other vocations of man.

This requires not only correct technical knowledge, but a peculiar fitness of temperament. Scholars may be found in all departments of learning who pursue their work for the pure love of learning; but very few are able or care to keep a watchful eye, while pursuing their investigations, upon the possible applications of accepted facts to the economic needs of the race.

The demands of the agricultural colleges, in their rapid growth, have far outstripped the supply of suitable men and the institutions in the more populous states, which have been able to offer the best salaries, have acquired the best men. In the smaller institutions this has resulted in somewhat inferior faculties or in a lack of permanency in the teaching staff, either of which is sadly detrimental to the best work.

Utah, one of the greatest of the states in natural resources, needs and must have the best possible men in her Institution of Industrial Education—men trained broadly with a view to West-

ern conditions. To secure this condition a high
 Attempts to scholarship is now required of the teachers of the
 Improve Faculty. Agricultural College, and the best men have been
 paid salaries as large as circumstances would justify. A number of the teachers have been granted leaves of absence for advanced work; some of these have already returned, to the great good of the Institution; others will return within a year or two. Promising young men, likewise, have been encouraged to seek post-graduate work in the large institutions of the land, in the hope that they may be secured for service in their home state. Unfortunately for the State, most of these young men have done their work so well that offers of employment at excellent salaries have come from other states. At the present the College is beginning to require a training equivalent to the doctor's degree for its professorships and a corresponding scholarship for the lower positions. Under this policy the scholarship of the Faculty has been largely increased. The new appointments have been made only after the most careful examination as to scholarship and general fitness for the work. On the Faculty are represented all the great sections of the country and most of the leading educational institutions.

However, it is useless to attempt to maintain a high scholarship or permanency among the Faculty unless the general salary schedule can be raised. During the last
 Necessity of twelvemonth, members of our Faculty have been
 Better Salaries. offered professorships in three of the largest colleges of the country and the directorship of an important experiment station, at salaries far exceeding those paid here. If these men are worth the best inducements to go to other states, they are worth as much to our State. By great effort important Faculty resignations have been prevented this biennium—an unusual condition for this Institution.

Moreover, the preparation for teaching covers many years and requires the expenditure of much money. After active service is entered upon, the faithful teacher finds little time to mingle in the money-making affairs of
 The Cost of the Teacher's Work. life. He must depend almost wholly upon his savings from his salary for protection against sickness and old age. In view of these facts the existing salary schedule at this Institution is exceedingly low.

At present the Faculty numbers twenty-two professors; twelve assistant professors; twenty-nine instructors and seven

assistants. Special teachers are engaged for short periods during the crowded months. The instruction given has been honest, correct, modern and in full accord with the spirit of the school. Remarkable harmony exists among the members of the Faculty.

The success of the Institution the last two years is due largely to the earnest and faithful work of the members of the Faculty. Each individual has done his duty so well that there has been no need of disciplinary action. Only praise can be spoken for the members of the Faculty of the Agricultural College of Utah. No finer or more loyal body of men and women can be found.

THE ALUMNI.

The activity of the U. A. C. Alumni Association during the last two years has been most encouraging to the Faculty and students of the College. This Association is composed of young men and women (the first class graduated in 1894) who are busy laying foundations for their future careers. The Institution can not well expect direct help from persons so engaged. Yet the Alumni Association has taken an interest in the College and its affairs which has been a pleasant feature of the work of the biennium.

It has been especially noticeable that large numbers of the graduates return to Logan to attend the Commencement Exercises and the annual meeting of the Association. In this way a first hand knowledge of the growth and present status of the College reaches the Alumni. Further, throughout the year there is an increasing number of visits from the graduates, as they pass back and forth over the country and within easy distance of Logan. In fact, several graduates have recently taken comparatively long journeys in order to spend a few days amidst the scenes of their student days.

The Alumni Association, as a body, has instituted a number of innovations. One of the pleasantest is the annual Alumni Ball, held immediately after New Years. This brings together a large number of friends and former students of the College. Recently, also, the Association proceeded to organize its efforts in behalf of a gymnasium, of which the College is in great need.

The most important work done by the Alumni Association

was the writing and publication of the U. A. C. Graduate—a record of the work of all U. A. C. graduates up to the year 1910. The work was authorized by the Association under the editorship of Professor C. Larsen, '95, with Osborne J. P. Widtsoe, '97, as associate editor. The U. A. C. Graduate is a beautiful octavo volume of two hundred and seventy-two pages of heavy enameled paper. It is well printed and splendidly illustrated. If it is true that "by their fruits ye shall know them," then this volume is the best existing evidence of the excellent quality of work done by the Utah Agricultural College. Of the one hundred and forty-three graduates listed in the volume, scarcely one has failed to achieve high success, even though the graduates as a whole are yet young and many years from their mature powers. The really remarkable record of the graduates is an index to the influence of the College upon the State through the twelve thousand or more persons who have been students of the College. (See the Appendix for a list of names and occupations of the Alumni.) Since the publication of this volume, thirty-six students graduated with the class of 1910, and approximately sixty will graduate next spring. It is evident, therefore, that a supplemental volume will soon have to be issued.

Recently the Board of Trustees authorized the Alumni Association to appoint a committee to act in an advisory capacity to the Trustees, especially in the way of expressing the views of the graduates relative to the work and progress of the Institution. Such a committee was promptly appointed and consists of Lewis A. Merrill, '95, J. E. Shepard, '94, and Lizzie O. McKay, '09.

The continued activity of the Alumni will do much to further the interests of the College. It is only just to add that the recent graduate interest in the College is in a large measure due to the intelligent and continual labors of Professors Christian Larsen, '95, who for three years has been president of the U. A. C. Alumni Association.

THE STUDENT BODY.

There has been a remarkable increase in the number of stu-

dents attending the Institution during the last two years. Five years ago the total registration was 717; last year it was 1,044 and at the present writing about 135 more students are registered than on the corresponding day of last year. This increase of more than fifty per cent, is undoubtedly the best index to the standing of the Institution among the people of the State. More encouraging than the increase in the total registration is the increase of college students. Five years ago there were 148 students of college grade; last year 308, and this year, at the present writing, this number is already exceeded. That is, during four years the total number of college students has more than doubled. As a consequence the graduating classes have grown much larger. Before 1909 the largest class in the history of the Institution, that of 1905, numbered 19; the class of 1909 numbered 20, the class of 1910, 36, and there have already been recommended for graduation with the class of 1911, 58 students. In other words, the number of degree graduates during the last three years, including the current year, number 114, as against a total of 123 for the preceding fifteen years. As high schools begin to multiply throughout the State there will be more demand for college work and the future of the College, therefore, is in a large measure dependent upon the degree to which an institution of college grade can be developed. However, it would be a serious mistake at the present time to remove the high school department, since the few high schools regularly established throughout the State do not stand emphatically for the kind of education represented by the Agricultural College. Until a sufficient number of high schools shall be established in the State which give emphasis to industrial education it will be necessary for the Agricultural College to maintain its high school department. In the natural course of events, however, the attendance will gradually diminish and in time the department will vanish.

The students of the Agricultural College come from every county of the State. The distant southern counties and the larger cities are surprisingly well represented. A considerable number comes from neighboring states; a few from eastern states and from foreign countries.

The average age of the students in their respective classes is gradually diminishing, due undoubtedly to the more highly perfected educational system of the State which permits children to graduate from the grade schools at an earlier age than heretofore.

As reported in the last biennial report, the students of the Institution are organized into the Student Body Organization, with a complete staff of officers. The Student Body has in charge all matters pertaining to student amusements and general activities. The experiment is now in its fourth year and has proved eminently successful. The students have shown excellent judgment in nominating and electing the best of their fellows for all the important positions.

As also stated in the last report, an annual incidental fee of \$5.00 is now collected from every student who enters the Institution. In return each member of the Student Body Organization receives a ticket which admits him free to all the regular amusements under the direction of the Student Body. He also receives free an annual subscription to Student Life, the student publication. The establishment of the Student Body fee has proved to be a most helpful factor in furnishing to the students an abundance of high class amusement at a minimum cost. It has been demonstrated that each student receives from \$10.00 to \$15.00 worth of amusements during the year for the original payment of \$5.00. Further it has brought about a solidarity of student effort. At games, concerts, theatres, dances or lectures, the students turn out in a body since their admission price has already been paid, and the effect of such united action on the part of the Student Body is felt in every department of activity of the Institution. As an evidence of the success achieved it may be mentioned that the other advanced schools of the State have already adopted the plan in whole or in part.

Student Life, the publication of the students, appears as a weekly every Friday forenoon, and in magazine form every two or three months throughout the year. The weekly edition contains the current news of the Institution; the magazine section represents the literary activity of the Institution. So important a fac-

tor has Student Life become in the life of the Institution that scarcely a student out of the hundreds who attend fails to call at the publication office Friday morning at 11 : 30 o'clock to get his paper and to spend a pleasant half hour in reading the comments—both sense and nonsense—on the school events.

The chief characteristic of the Student Body Organization has been its loyalty to the Institution. The four presidents, since the organization, and all the other officers have done their work in careful co-operation with the administration of the College. On a number of occasions the Student Body as a whole has expressed its willingness to assist in the upbuilding of the College. A tangible evidence of this feeling came to hand near the close of the last school year, when the Student Body of the school appropriated \$500.00 to the College to be used toward the construction of the hoped-for gymnasium. This gift meant a sacrifice on the part of every student of the Institution, at the close of a heavy year when relaxation is really necessary as well as desirable and it represents considerably more than the actual amount of money involved.

Several independent student clubs and associations also exist. There are a few fraternities and sororities which, however, are practically open societies and are really helpful in the work of the College. Then, the School of Agriculture, the School of Home Economics, the School of Commerce and the School of Mechanic Arts, each maintains a club composed of the students, usually of college grade, registered in the school. These clubs have for their purpose the discussion, at set intervals throughout the year, of matters connected with the special work of the school. These organizations, now fully and firmly established, are of great value in unifying and making strong the work of the various divisions of the Institution.

A new student venture was launched two years ago in the form of a year-book of the junior class. It was christened the Buzzer by the first class of 1909 which undertook its publication, and the name has apparently proved acceptable, since the other classes have continued to use it. The Buzzer is an annual illustrated record of the events of the school year, from the stu-

dents' point of view. The two volumes already published are excellent evidence of the ability of the classes and also good examples of the printer's art. The Buzzer now appears to be well established and will furnish a semi-humorous record of the work of the Institution from year to year.

Since the last biennial report was written, the senior classes have established the practice of leaving some permanent gift to the Institution, just before graduation. The class of 1909 presented to the College a beautiful marble sanitary drinking fountain which is placed in the main hall of the first floor of the main college building. The class of 1910 presented a marble clock of excellent workmanship which has been installed in the south wall of the library. This custom is another evidence of the good spirit prevailing among the students toward their college.

Last year the students as a whole, headed by the Student Body Organization, but without drawing upon the funds of the organization, contributed a sum of money sufficient to purchase and instal a large electric "A" which has been placed at the top of the main College tower. This is lighted on all nights of the school year and may be seen from nearly all parts of the city. It is a constant reminder to the citizens of Logan of the loyalty manifested by the students toward the Institution, and is a source of inspiration to the students themselves.

From all this it may be gathered that the spirit of the students of the Agricultural College is of the very best. Some rearrangement in the disciplinary procedure has made it possible to secure attendance in classes and good behavior with a minimum of friction. The fall reports of the present year have just been issued and out of a total of approximately one thousand students, nineteen only were found to need any kind of reprimand. Statements concerning the student's work are sent out five times a year to parents or guardians, and whenever any student violates the College regulations his parents are communicated with before punishment is decided upon. The students as a whole are willing to do the work required of them, and are ladies and gentlemen in their behavior among the people of the city.

It must not be inferred from the report just made that the incidental work is the main consideration of the College author-

Scholarship of Students. ities. Two years ago an institution known as the College Roll was created. It is a list of the names of all students who reach high scholarship in their class work. The list is published in Student Life and is published on the bulletin boards of the College. All students who obtain a certain standing in their classes are placed upon the first College Roll and those of a slightly inferior standing on the second roll. This device has put a premium on scholarship and has stimulated a keen desire to secure a place on one or other of the College Rolls. The result has been that the scholarship of the Institution has risen considerably. The daily work in the classes has been done more conscientiously and more care has been exercised in complying with the requirements of reports and laboratory work. A large number of students has succeeded in making the College Roll. The roll is revised five times throughout the year, that is, at the end of each hour and final examination, so that a student must continue his good work throughout the year to maintain his membership on the College Roll. At the close of the school year a gold pin carrying the letter "A" is awarded the ten most scholarly students of the Institution. A healthy competition has developed for nomination to this honor.

The Agricultural College is proud of its Student Body.

ORGANIZATION.

For the purpose of more efficient administration the work of the College is divided as follows:

1. The School of Agriculture.
2. The School of Home Economics.
3. The School of Commerce.
4. The School of Mechanic Arts.
5. The School of General Science.
6. The Extension Division.
7. The Agricultural Experiment Station.

A director exercises immediate supervision over the students and work of each of the above divisions. These directors, with the President and Registrar, constitute the Directors' Council which deal with the questions that arise in the routine management of the Institution.

The instructional and experimental work of the College is

further divided into departments, each in charge of a professor who supervises the teaching and students in the department.

THE SCHOOL OF AGRICULTURE.

The School of Agriculture has grown more rapidly than any other division of the Institution. In a young state with vast agricultural possibilities this is only as it should be. The total registration in the School of Agriculture five years ago was 118; last year, Attendance. 412, and at the present writing it promises to exceed that of last year by perhaps fifty students.

This increasing interest in agriculture is especially manifest in the number of students of college grade. Five years ago 31 students studied agriculture of college grade; last year there were 121, and this year there are already registered 139 agricultural students of college grade. With the graduation of the class of 1908 there had been graduated from the Institution 16 students in agriculture. With the class of 1909 there were 10 graduates in agriculture; with the class of 1910, 20, and there have been accepted for graduation with the class of 1911, 37 students of agriculture. That is, during the last three years 67 students have graduated with college degrees in agriculture as against 16 in the preceding fifteen classes. No one statement illustrates better the present tendency of the work of the Agricultural College of Utah.

All the graduates of the School of Agriculture have, so far, found satisfactory employment of a professional nature, either with the Federal or State governments, with the agricultural colleges and experiment stations, or with high schools offering agricultural work. It is to be hoped that the time is near at hand when the agricultural graduates will go out to engage in practical agricultural work for themselves. However, the present conditions throughout the country are such that those who qualify themselves for expert work in agriculture are needed as centers of inspiration in our schools and colleges, or as investigators to solve the great problems still troubling the American farmer. It is also to be remembered that for each student who graduates in agriculture hundreds complete a portion of the course. This greater number is scattered over the farms of the country to introduce methods and ideas that will better, infinitely, the general agricultural conditions.

The rapid growth of the School of Agriculture has necessitated many changes and improvements. The stock judging pavilion, constructed through the generosity of the last State Legislature, gives, for the first time, a permanent home to the instructional work in live stock; it furnishes also a place for large gatherings of farmers, such as the annual Round-Up. Within a few months after its completion, this building was taxed to its utmost capacity by the farmers attending the demonstrations during the round-up weeks of January, 1910. Valuable additions have also been made to the live stock equipment. As far as possible, all grade animals have been sold, and replaced with registered stock. It will of necessity take considerable time to secure ideal individuals of the different breeds, but continual attempts are made to better the herds and flocks.

The few rooms which formerly accommodated the agricultural students have long since been filled to overflowing. At present the agricultural work, including botany and zoology, occupies in addition to the stock judging pavilion, the north and south wings of the first floor of the main building; also two rooms in the west wing; practically the whole of the north wing of the basement and one room on the second floor. While the floor space now used by the School of Agriculture is many times larger than that of a few years ago, yet it is utterly inadequate for the present needs of the work. Every room in every building of the Institution is being put to full use; it is absolutely essential that more room be provided immediately if the agricultural work is to be properly housed.

Much new equipment has also been added to the various departments of agriculture, but nevertheless our equipment is insufficient to meet the demands of the growing classes in agriculture.

The faculty of the School of Agriculture has been materially strengthened. All new appointments have been made with a view to higher scholarship, probable permanency and better fitness for the work required. Changes and additions already in contemplation will improve materially the efficiency of the agricultural faculty.

If the State can make suitable appropriations, it will not be long before the agricultural work of the

State of Utah will be headed by a corps of instructors, which in training, experience and sympathy with agricultural work will be second to none in the whole country.

The courses in agriculture have remained practically unchanged during the last two years. The few changes made were necessary because of the new demands resulting from the growth in attendance. The new Courses of Instruction. schedule which goes into effect next year will necessitate the complete reconstruction of the agricultural courses, and the attempt will be made to construct a course in agricultural instruction which will be strictly modern and in harmony with the conditions prevailing in Utah.

It is with regret that it is necessary to report that the course in veterinary science leading to a degree, which was organized some three years ago with a very large Veterinary Science Course attendance, has had to be abandoned owing to a governmental ruling requiring all schools offering Curtailed. degrees in veterinary science to employ at least five graduated veterinarians. The wisdom of this ruling is doubtful, but as it was made it became necessary for a number of the agricultural colleges to abandon their schools of veterinary science. With the present resources of the Agricultural College of Utah it is wholly beyond question to maintain so large a faculty in veterinary science, when other equally important departments are suffering for the want of sufficient help.

The work in forestry has been continued as heretofore in connection with the Bureau of Forestry. No attempt has been made to organize a regular college course in this subject, chiefly because in the Forestry. West the graduates of such a course are almost entirely dependent for employment upon the Bureau of Forestry, which naturally has the right to change its policy and requirements at any time. Meanwhile, arrangements have been made whereby the department of horticulture and botany will include, beginning with next year, work that will enable students who desire to specialize in forestry to secure a sufficient amount of technical work to enter the Forest Service or to take advanced work in the schools of forestry. The short course of forestry, given through the kind co-operation of the Bureau of Forestry, has been eminently successful.

One of the heavy burdens of the agricultural faculty has

been the extension work. The calls from the farming communities of the State for assistance in the form of Extension. lectures and demonstrations become more numerous and insistent from year to year. The Work. Director of the Extension Division has only a small amount of money at his disposal and has, therefore, been obliged to draw upon many of the regular teachers for help. This has been complied with as far as possible, but always with a distinct loss to the classes which were left for a few days without their regular teachers. It is to be hoped that as rapidly as possible the Extension faculty may be sufficiently enlarged so that occasional absences in the institute field will not seriously interfere with the regular work of the Institution.

The needs of the School of Agriculture are many. First, and most important at the present time, is the need of more men to assist in the work of teaching and experimentation. The competition throughout the country for the best men is very keen. The men who were sent out by the College some years ago to prepare themselves for work in Utah are being offered excellent positions in other states. The only way by which the best men can be obtained and held is to offer them salaries comparable with those offered by other like institutions. The second need is more room. The time has come when the State must think seriously of granting to the Agricultural College a building devoted primarily to agricultural work. Should a new gymnasium be authorized so that the present gymnasium and drill hall could be converted into class rooms it is

Needs of
School of
Agriculture.

barely possible that the Institution might make shift with its present floor space for instructional purposes for another two years. This, however, could only be a temporary make-shift. An agricultural building is needed. It could probably be built in sections, one every two years, until a structure sufficient to accommodate the agricultural needs has been completed.

An Agricultural
Building Much
Needed.

Considerable new work is being offered in agronomy, horticulture, entomology and farm engineering, all of which will require more room. Especially is this true in the case of farm engineering. Offers have been received from nearly all the leading implement makers of the country, to place at the disposal of the students the leading types of farm machinery for instructional use. So far, only a few

Need of
Building for
Farm
Machinery.

of these offers have been accepted, because there is no room in which to house the machinery when it arrives. This branch of agriculture is especially important in our age in which the progress of agriculture has been made possible by the development of agricultural machinery.

The greenhouse facilities of the Institution have become wholly inadequate for the present needs. Another greenhouse that can be used jointly by the departments of
 Need of agronomy, entomology and the Experiment Sta-
 Greenhouse. tion should be furnished, if possible, by the com-
 ing Legislature.

There are a number of other miscellaneous needs, such as additions to the live stock, the proper fencing of the fields, a dairy shed under which the dairy cattle can be
 Other Needs. fed throughout the winter months and finally a
 small dairy building for the manufacture of but-
 ter and cheese. The present dairy is located in the basement of the main building and is old-fashioned and unsanitary.

All in all, the School of Agriculture is in a most flourishing condition. Its needs are those which come from healthy and rapid growth. The excellent condition of this part of the work of the Agricultural College should be an index to the people of the State that the Agricultural College of Utah is fulfilling the mission which has been assigned to it by the laws of the State and the Nation.

THE SCHOOL OF HOME ECONOMICS.

During the last biennium the School of Home Economics has undergone a complete reconstruction. The work in home-
 History of the making and housekeeping was inaugurated at
 Work in Home this Institution during the first year of its his-
 Economics. tory. It is, therefore, one of the oldest depart-
 ments of home economics in western America.

The school was early assigned quarters in the basement of the main building, and on part of the first floor of the south wing of the same building. There it remained with few additions to its equipment for over fifteen years. During this time the subject itself expanded greatly; and it became understood that woman's education for her special work must be made co-ordinate with the training of men for their life pursuits. In fact, one of the great difficulties facing the workers

in behalf of industrial progress is that the wives and mothers are inferior in training for their daily work to the husbands and fathers. As a consequence a dissatisfaction arises which causes irreparable injuries to the family. In harmony with this modern view and demand the last Legislature generously appropriated money sufficient for the remodeling of the old dormitory, which had never been successful, into a modern woman's building. The change was completed nearly a year ago at a somewhat higher cost than was expected, but with the result that the State now possesses one of the most modern and satisfactory buildings for the teaching of domestic science and domestic art in the western states. The building is sufficiently large to accommodate all the women who may seek such instruction in this institution for perhaps ten years to come, and it is well equipped for first class work. The State of Utah can point with pride to the provision that has been made for the proper instruction of its young women in the special work pertaining to homemaking.

The faculty also was thoroughly reorganized. Miss Ellen A. Huntington, A. M., (Columbia) was employed as director of the school. Associated with her are a number of well trained women in domestic science and art. The building, faculty and equipment appear to be sufficient, with some additions from year to year, to take care of the work in home economics in a satisfactory manner for a number of years to come. It is to be hoped, however, that the parents of the State will become converted to the necessity of educating their daughters for the special work that most women have to do and thereby crowd our facilities to the utmost.

The courses offered in home economics have been slightly changed. During the present year all the courses will be thoroughly revised to conform with the best thought and experience in home economics. Last winter a housekeepers' conference was held soon after New Years, which, considering the fact the work was new and that women find it difficult to leave their homes in the middle of the winter, was very well attended. Soon afterwards, a conference of teachers of home economics in the western states was also held. The chief subject was the proper teaching of domestic science and art in the high schools.

The attendance in the School of Home Economics is very

satisfactory. Some prejudice still exists among the people against the training of girls for home work.

Attendance. There is a somewhat common idea that a girl can receive instruction at home sufficient to prepare her for all her future needs. The girl can no more be fully trained in the home than can the farmer's boy, unless the parents constitute themselves simply a school of instruction in technical matters. As the farmers have been converted to the necessity of agricultural education, so the women are rapidly becoming converted to education for homemaking.

Much good has been accomplished by the School of Home Economics in its extension work. Thousands of women have attended the various housekeepers' schools held at different localities in the State. Numerous letters have been received testifying to the value of the work accomplished. At present a woman is employed specially for the purpose of meeting with the women of the State and giving instructions and suggestions concerning the proper methods of homemaking.

The needs of the School of Home Economics include the completion of minor matters in the woman's building; additions to the equipment, and, if the attendance increases, a small addition to the faculty. It is important, now that this school has been placed on a permanent basis, that its present standard of excellence be maintained.

This feature of the work of the Agricultural College is practically of the same importance as the agricultural work, and the officials of the Institution are giving it every possible support. It may be stated that at the last Summer School there was a surprisingly large attendance of women taking domestic science and art. It is probable that a large housekeepers' conference may be called in the summer after the close of the school year when the women are freer to move about than in the winter.

THE SCHOOL OF COMMERCE.

The purpose and importance of the School of Commerce are often overshadowed by the emphasis naturally given to the agricultural work. However, the School of Commerce is a very important part of a school of industrial education, for preparation for agricultural pursuits should always include

careful training in business methods, and, moreover, the commerce of a commonwealth is a direct expression of its industrial activity. It has always seemed proper, therefore, that the State's School of Commerce should be built side by side with the other departments of education in the industrial activities of the State.

The special purposes of the School of Commerce are, first, to train office employees; second, to train business experts or captains of industry, and, third, to give to students of the State who intend to enter upon the practice of law a rational preparation for their law studies. As indicated by the Director of this School of Commerce, for a number of years it was in a state of decline, but recently, because of the general prosperous conditions prevailing in the school and the strengthening of its faculty, it has taken upon itself new life and is now growing so rapidly as to promise to become one of the large and important divisions of the Institution.

During the biennium it has received a few items of new equipment, such as typewriters, adding machine and the furniture has been renovated and put in good condition. The main expense of this department is the item of salaries. The supplies and other general maintenance are very small indeed.

The School of Commerce can boast at the present time one of the best faculties in the whole inter-mountain country. It does not merely do the technical work required in the School of Commerce, but through its work of economics and accounting it comes in direct contact with almost every student of the Institution. All agricultural and home economics students are required at the present time to do a certain amount of work in economics, and it is planned that they shall become somewhat familiar with the methods of keeping accounts.

With the increase of attendance of the School of Commerce more room is needed for its work. This can only be provided for if the Legislature makes suitable appropriations. The supplies for the School of Commerce are only the material necessary to make the offices of the department typical of the best business offices of the country at the present day. The School of Commerce is in excellent condition. It is sure to grow and to become a great power for good in the Institution itself and in the State as a whole.

THE SCHOOL OF MECHANIC ARTS.

As has been repeatedly stated in earlier reports, the School of Mechanic Arts has for its purpose the training of mechanics in a modern manner; that is, to say, not merely training of men to do skillful work, but teaching them the principles underlying all the processes of their crafts. That this school is really needed in Utah and in the whole western country is beyond question. The dignifying of the trades and the encouraging of young men to expert craftsmen are among the essential needs of the whole country and especially of the young growing states.

In order to make this division of the work of the Agricultural College more efficient it was thoroughly reorganized a year ago. Mr. W. S. Drew, A. M., (Columbia) was employed as director of this school. With him are associated a faculty of skillful mechanics who have good general educations. The result of these changes is very evident, since the enrollment this year is larger than that of any year during the last decade. Most of the shops are crowded to their limit and in one instance there is not room enough to accommodate all the candidates for work.

In this school, as in the others, the need for more room is most insistent. After considerable investigation it is suggested that the north and south wings of the mechanic arts building be raised one story. The original intention was to make the building a two story structure and the foundation and the walls were built with that in view, though the funds were not available to complete the building which has, therefore, remained a one story structure. During the last two years the roof has leaked so badly that it will be necessary within another year to put down an entirely new roof. When this is done it would be a good time also for raising the structure itself. Such a change would also enable the department to bring from the main building, mechanical drawing and thus release the present mechanical drawing rooms for other purposes. A careful estimate of the cost of such reconstruction has been made and it is estimated at \$10,000.00.

A large demand has also arisen of late for horse shoeing. Up to the present it has been impossible for the Institution to

employ a competent man to give instruction in Horse Shoeing. this important branch of mechanic arts. The coming appropriation for the Institution should be large enough to provide for such an instructor.

The necessary supplies of lumber, iron, etc., are always large, and the school itself is somewhat expensive to maintain.

Supplies. However, there is a distinct need for it in the State, and the Legislature should maintain it and make sufficient appropriations to enable it to meet the demands that new growth and new conditions produce. The outlook for the School of Mechanic Arts has never been brighter than it is today.

THE SCHOOL OF GENERAL SCIENCE.

The School of General Science makes no special demands upon the Institution. In it are grouped the students who have not decided to enter any one of the regular technical schools of the Institution, but who choose their classes from those regularly offered in the Institution. This school furnishes an excellent opportunity for preparation to students who intend to enter professional schools of medicine or law, or who desire to go into pure science as a life pursuit. Moreover, there is always a large number of students who are able and desirous of completing a general education before entering upon any special line of work. The School of General Science has been maintained to good advantage for many years as an integral part of the Institution. It is not growing rapidly, but is in a good condition.

THE EXTENSION DIVISION.

During the last biennium the extension work has grown to such proportions that it was made a division of the College co-ordinate with the schools of the Institution and the Experiment Station. The Extension Division is characteristic of the spirit of modern education in that it attempts to bring educational light to all, young or old, poor or rich. The permanently located schools are primarily for the young people who can leave home to obtain their educations; for the parents and those who are unable to take advantage of the permanent schools, movable schools are held which bring the light of modern truth to the

Spirit of
the Work.

very doors of all. In the mission of the Agricultural College, the Extension Division holds a very high place.

It would be a very slow process indeed to establish modern practices in agriculture, housekeeping and related subjects by educating small numbers of boys and girls who as they grow to maturity will follow better methods. The Extension Division reaches large numbers and not only helps to improve rapidly the methods of agricultural practice, but it teaches the parents to demand from the schools that practical education be offered their children.

The work is done by holding farmers' institutes, which are short sessions covering one or two days; by farmers and housekeepers' schools, which are movable schools of one week's duration at which both men and women receive instruction; by farm and home lectures which are given in connection with the high schools of the State and represent an effort to encourage the teaching of agriculture, home economics and related subjects in the high schools of the State; by farmers' demonstration trains, which are usually run in co-operation with the railroads and for the benefit of farmers who live within easy access of the railroads; by state and county fairs which while maintained by the State and counties yet employ for stock judging and other purposes agricultural experts usually sent out by the College; by co-operation with the State University in which lectures on agricultural subjects are given to the normal students who are to be the teachers of the youth, and by miscellaneous work which includes especially the answering of thousands of letters making inquiries concerning the methods and difficulties that arise in the farm and the home.

It can easily be understood how difficult it is to make so varied a program wholly successful. However, the Extension Division, under the direction of Professor L. A. Merrill, has succeeded in being of immense service to the State, and incidentally to the whole cause of industrial education. This is best demonstrated by the large attendance at the various forms of extension activity during the last biennium. Forty-seven thousand eight hundred and thirty-five men and women attended the institutes, schools and lectures offered by the Extension Division; that is, allowing for the men and women who attended several of these sessions, one-tenth of all the people of the State attended the extension work of the Agricultural Col-

lege, and indirectly nearly one-fourth of the people was made aware in some degree of the message brought to the State by the extension workers. Such work brings results. In fact, the requests that come from the State for extension help are so numerous that a staff five times as large could not give the required help. The time has come when more men must be added to the extension staff. It is no longer possible with the growth of attendance at the Agricultural College to permit the regularly employed professors to be absent to any great extent from their classes. Special men must be employed to take care of the extension work. It is, therefore, to be hoped, strongly, that the present appropriation of \$5,000.00 for extension work be increased to \$7,500.00, so that an additional man or two may be employed to assist the present force, and that more equipment and illustrative material may be secured.

The Extension Division in the last four years has risen to be one of the most important divisions of the College and has made itself a power for good throughout the State. The director and members of the staff are to be highly congratulated upon the excellent work that they have performed.

EXPERIMENT STATION.

While the Experiment Station is usually discussed last in a report of this kind, it is first in order of existence and possibly in importance. The Utah Experiment Station Importance. was in active operation sometime before the Agricultural College opened its doors for students. The work inaugurated and accomplished by the Experiment Station first drew the attention of the people to the value and necessity of special training for agricultural work. As the Station has grown it has assisted in founding and developing a number of industries in the State.

It is always difficult to measure the financial value of education; but we are all agreed that a nation can not prosper without it. It is, however, comparatively easy to state in dollars and cents much of the work that has been accomplished by the experiment stations of the country. As for the Utah Station it may easily be shown, without entering into details, that it has brought back to the State many times the money given it by Congress and by the State. The recent condition of peace and permanency in the Institution has done much toward the re-

establishment of the Station on a permanent and large basis of usefulness. Its influence is being extended every year.

The work of the Station has been planned to solve the questions peculiar to western agriculture. Among the investigations are the following: Irrigation and drainage, with particular reference to orchard irrigation and the reclamation of alkali lands; Dry-farming, with its problem of reclaiming our vast unirrigable deserts; The agricultural development of the extreme southern part of Utah through the work of the Southern Utah Experiment Station; The development of the poultry industry; The development of types of sugar beets better adapted to our Utah conditions than those that have come to us from Germany; The development of the sugar beet seed industry; The breeding of alfalfa with a view of securing more profitable varieties of this important crop; Horticultural work for the purpose of developing and making permanent this fundamental industry of the State; The investigation of live stock conditions; The investigation of the effect of arsenical sprays upon the life of fruit trees, in view of the recent statements that the destruction of the codling moth by means of arsenical sprays is injurious to the life of the fruit tree; The study of the means of eradicating the alfalfa weevil, one of the most destructive pests that ever reached American shores; The eradication of the sugar beet leaf hoppers which have already destroyed several crops of sugar beets in this and neighboring states; The study of the maintenance of the fertility of Utah soils under irrigated conditions; A soil survey of the State for the determination of the factors by which the fertility of our soils may be permanently established, and numerous other important lines of work. By referring to the report of the Director of the Station these investigations may all be found more fully discussed. Numerous minor matters of investigation have arisen and settled in the course of the regular work; and a large amount of correspondence comes to the Station which is handled at the cost of considerable time and labor.

The best thing about the work of the Station at the present time is that it has been thoroughly systematized and put upon a definite footing. The recent unsettled conditions at the Institution made a complete reorganization necessary; such changes can be made only slowly after much and careful deliberation.

Work in
Progress.

Definite Policy
and Work.

The Experiment Station has been and should remain of great service to the agricultural communities of the State. Utah is young and undeveloped. The work that is done now in this young State to show its possibilities and warn against the needless destruction of its natural resources will return as accumulated interest throughout all the ages of time.

The recommendations of the Director of the Station should be most heartily approved, especially since the moneys asked for are sure to come back in actual dollars and cents through the improved methods, results and conditions of the people.

MISCELLANEOUS DEPARTMENTS.

An examination of the reports of the various departmental heads found in the appendix shows that the work done during the last biennium has been of a high grade and that every Faculty member has devoted himself loyally to the work assigned him.

The needs of the departments, aside from more teaching assistance, are more room and more and better equipment. Comparatively little has been added to the equipment of the Institution during the last few years and the departments are in great need of additions to their stock of instruments and apparatus for instructional purposes. The increase in the number of college students has made necessary the organization of more classes and more sections of established classes. This has made unusually large demands upon our equipment. Where, for instance, twenty-five microscopes seemed ample in the past for certain departments, seventy-five are now in requisition, and there is immediate need of more. While a first class faculty is of prime consideration in the building of a school, the proper equipment which enables a teacher to do the most effective work in the least time is only second to the teacher himself.

A proper appropriation, therefore, is necessary for the equipping of the various departments according to their needs. It can not be hoped that all that is needed by way of equipment can be given at one time, but if a sum sufficient to make a good beginning can be secured at this session of the Legislature, and successive sessions will continue the work, in the course of a few years our equipment will probably be sufficient for our needs. Meanwhile, it is also to be remembered that new discoveries and new developments involve new methods and new

tools, and that the equipment of an institution like this will always be outgrown as knowledge advances. The time will never come when an educational institution doing modern work will be without demands for new equipment. This is particularly true in the case of institutions like the Agricultural College which stands for the newest in education—preparation for the practical life of men and women.

IRRIGATION ENGINEERING.

On July 24th, 1847, the Pioneers entered Salt Lake Valley, and on that and the following days the first irrigation ditches were constructed for watering the parched soil into which the first plantings were to be done. Thus began modern irrigation in America, and thus Utah became the mother of modern irrigation. Since that time irrigation farming has grown tremendously. By its aid desert wastes have become converted into empires. It has become an established fact that irrigation makes possible the most desirable form of soil tillage.

A demand has come and is growing for men trained in the building of canals and reservoirs and the proper division and use of irrigation water for crop production. Over-irrigation, alkali lands, new soil types, new crops, demand expert help from the man trained in irrigation practices.

Utah, the mother of modern irrigation, can not give much aid in solving the problems of the great art which she initiated, for neither of her great institutions of higher education is permitted to train men in all the things that leads to a degree in irrigation engineering.

State pride alone should correct this error. The University of Utah and the Agricultural College of Utah should be permitted to give courses leading to degrees in irrigation engineering. In the University the training should lead to the builder of dams and canals; in the Agricultural College it should lead to the supervision of the actual use of water on the farms. There is ample room for the two classes of treatment. To avoid the old question of duplication it might be specifically reiterated in the statutes that civil or other kinds of engineering should not be given by the Agricultural College.

The present joint course in Irrigation offered by the University and the Agricultural College is theoretically good, but in practice it has enrolled no students.

PAVEMENTS AND STREET CARS.

The administrative officers of Logan city have inaugurated during the last few years a number of improvements which are of great value not only to the citizens residing permanently here, but of immense importance to the great number of students who assemble in Logan every year. A sewerage system, covering the larger portion of the city and which will be extended as rapidly as is possible, has recently been installed; cement pavements have been constructed along all the principal streets; the improvement of the water supply is under active discussion, and all in all it seems that Logan, blessed with great natural resources, is to be made, so far as the art of man can reach, a very desirable place for the habitation of man.

Upon the request of the Agricultural College and the citizens of Logan who live between the College and the center of town, a series of cement pavements were last year constructed from Main Street along the streets used most frequently by students to the Agricultural College. At the present time, therefore, the College is connected by excellent pavements with all the important parts of town. New pavements are continually being laid and it is only a matter of time until all the boarding places occupied by students will be properly connected with the College. This is a great change from the old condition when students and teachers had to wade, during the wet months of the year, through deep mud to reach the school. The students, and through them the people of Utah, are under deep obligation to Logan City for this great improvement and convenience.

"It never rains but it pours." With the advent of the cement pavements, talked about as a remote possibility for many years, came the construction and operation of the electric street railway connecting the railway station, the center of town and the Agricultural College. The existence of such a line in Logan had been an "Arabian Night's" dream for many years. When it suddenly came into existence the people of Logan and especially the students and officers of the Agricultural College could

scarcely believe it. The street railway system has already proved itself to be of great service to the Institution. Lectures in the College hall and games on the campus now attract large crowds of citizens; whereas, in the past the walk of a mile and a half seemed to make it impossible to hold public gatherings on College Hill. Especially in cold and wet weather does the street railway become of great service to the students. The women of the Institution who usually had to seek lodgings very near the College in order to avoid the long walk may now choose from among the boarding places of the whole city, with the knowledge that whenever desired, the street car will bring them to the College with a minimum of effort on their part.

The construction of the cement pavements and the operation of the street car are two great permanent factors for the development and growth of the Agricultural College of Utah.

LANDS FOR RANGE EXPERIMENTS.

The range industry of the State, under the present administration of the public lands and the settling up of the dry lands under the Smoot Act, is changing considerably.

Needs of Range Industry. That it will continue for many years to be one of the leading agricultural industries in the State goes without question. We shall always have our mountains with their luxuriant grasses, and a large portion of our desert lands will not be reclaimed for generations by the methods of dry-farming or irrigation. The demand is being made continually upon the Institution for some work having in view the elucidation of the problems of the flock masters who are more or less dependent upon existing range conditions for their success. In attempting to give the desired help the Institution has been handicapped by the fact that it does not control any range district.

At the suggestion of Congressman Joseph Howell an examination has been made of a tract of land leading off from

Lands to be Secured Through Act of Congress. Logan canyon lying within one of the National forests. The Congressman is of the opinion that a special act of Congress may be secured whereby this land may be taken over by the State for the Agricultural College at the nominal price of \$1.25 per acre. The total tract covers approximately three thousand eight hundred and forty acres. The Legislature should be asked to make provision whereby such an

act of Congress, should it be secured, could be accepted by the State. It would furnish a permanent home for experiments on the range industry under the direction of the State Agricultural Experiment Station.

MILL TAX SUPPORT.

In the management of the institutions of higher learning in this State the one greatest difficulty is unquestionably the uncertainty of the amount of the biennial appropriations made by the Legislature for the support of these institutions. Scarcely has one Legislature adjourned before the faculty and administrative officers are discussing the probabilities of the next appropriation; for the manner of expending any appropriation should be varied in accordance with the probable maintenance provided for the years immediately ahead. Utah has indeed been very generous and consistent in the treatment of her advanced educational institutions. The appropriations have grown slightly but steadily in accordance with the growing and changing needs of the State. Yet, in spite of the good will manifested by the State toward education, some things have occurred which have seriously retarded certain features of the growth, at least of the Agricultural College. As an example: Six years ago a certain appropriation was made to the Agricultural College which appeared to be very fair considering the conditions of the Institution at that time. The organization of the school was proceeded with on the assumption that a correspondingly large appropriation would be made the following biennium. Four years ago, due no doubt to the educational turmoil prevailing at that time, the appropriation was less than two-thirds of the one immediately preceding. As a result, the Agricultural College entered upon a period of semi-starvation which, had it not been for the extraordinary efforts and loyalty of all concerned, might have resulted in disaster. Two years ago the Legislature made a liberal appropriation proportionate to the one of six years ago, but it was partly consumed in righting the ills which had arisen during the period of a low appropriation, and the effect of the period of "hard times" is still evident. Another such event would in all probability result disastrously, since it would destroy the confidence of the Faculty and friends of the Institution in the permanency of its life and growth.

Moreover, an institution as well as an individual, can plan more securely for the future if it can count upon a definite and certain income, even though this income be considerably less than the average of the varying appropriations made from biennium to biennium. This principle has found acceptance by the various law-making bodies and administrative officers of the State in the mill tax which now supports the public school system. It would undoubtedly mean ruin to the public schools of the State should they be dependent for their maintenance upon the exigencies that arise at the biennial sessions of the Legislature. The higher institutions of learning are affected in very much the same manner.

A very large number of the state-supported institutions of the country are today maintained on a mill tax basis. The largest and most successful, those which have given great prestige to their states, are almost without exception so supported. It would be a long step onward in the progress of this State if its higher institutions of learning could be placed upon a permanent basis of maintenance.

It does not seem at all improbable, in view of the great awakening in behalf of industrial education, that larger appropriations might be achieved for some years to come by trusting to the support of successive Legislatures, yet the feeling of certainty which will accompany a permanent income, though somewhat smaller than the possible biennial appropriations, is absolutely indispensable for the best educational work. Still further, if it were decided to set aside a certain proportion of the total income of the State for the needs of higher education it would assure the State that the University and the Agricultural College would grow only as the wealth of the State increases and that these two institutions would not attempt to outgrow the State itself.

The mill tax basis should probably cover all items of maintenance, including salaries, equipment, supplies, repairs of existing buildings, maintenance of grounds, etc., etc.; but unless made sufficiently high would not need to include new buildings.

The educational peace in our State, which has recently been re-established would undoubtedly become permanent should the Governor and Legislative Assembly act favorably upon the suggestion herein embodied.

I am assured that the authorities of the State University

are equally desirous of having such a measure passed. The State Superintendent of Public Instruction has repeatedly recommended it in his reports and the great majority of the leading men of the State who have given attention to the subject have become converted to the idea. This seems to be the opportune time for the Governor and Legislative Assembly to render this great public service to the State.

A NEW GYMNASIUM.

For more than ten years the Agricultural College of Utah has asked for a gymnasium. It now repeats that request with the assurance to the people of the State that it is
 A Gymnasium. one of the urgent needs of this great Institution
 Needed. of practical learning.

A gymnasium is needed, first of all, for the sake of the health and physical development of the boys and girls who enter the Institution as students. The overwhelming
 Reasons. majority of our students are the sons and daughters of the farmers and artisans of the State. They are used to active physical exercise and the sudden change from the work of the farm and shop to the quiet life of the student is often a severe physical shock. Under the present condition we have absolutely no means whereby these young men can be given proper systematic exercise to enable them to carry on their work as students in proper physical comfort. Moreover, the time has long since passed in our educational practices when the book-worm is at a premium. A sound mind and a sound body have become an essential of educational theory.

The women of the Institution, likewise, need physical care and attention. It is generally found that young women, because of their home lives and duties, require more physical development than the boys. It is the business of a modern school to return its students to their homes stronger both in body and in mind. For the pre-eminent reason that a superior race must have trained minds in vigorous bodies, the Agricultural College insists that it must secure a gymnasium.

Another reason is also an important one, for upon it depends a large part of the income of the Institution. The Federal Government when it made its generous annual gift to the Agricultural College made it conditional upon the teaching of military science and tactics. During the early and late spring this

work may well be done in the open air, on the parade ground, but when the rains and snows of late fall, winter and early spring come, the work must be done under roof. The room which has been used as a drill hall is located in the basement of the main building where a lot of pillars, necessary for the support of the building, interfere with the maneuvers; besides, it is an unhealthful place and poorly suited to our present needs. The inspectors from the War Department have suggested on their recent visits that it will be necessary for the Institution to provide a suitable drill hall in order to comply fully with the Governmental regulations. If a gymnasium were built it could be used during the proper hours of the day for the purpose of military drill. This is done in a very large number of the land-grant institutions.

The social life and public athletic events of the College would be under better control should a gymnasium be secured. At the present time the Institution owns no place where parties or dances or public games, such as basketball games, can be held by the Student Body. As a consequence, the public amusement halls of the city are rented for such purposes. This involves not only a large annual expenditure for rental, but also makes it very difficult for the College authorities to exercise satisfactory supervision over the amusements of the students. Then, too, the fact that the Student Body has to go away from the school for its amusements affects adversely the spirit of the students. A successful school should be the center of all the phases of the life of the students.

Yet another argument in favor of a gymnasium is that the present poorly ventilated and inadequate room used for gymnasium purposes can not be used with safety. It is located on the top floor of the north wing of the main building. The walls supporting it are not sufficient to stand the strain put upon them when large numbers of students are dancing or exercising upon the gymnasium floor. The walls have already cracked in a number of places and a large sum of money is expended annually for restoring the plaster of the rooms in that part of the building which is shaken down because of the exercise on the gymnasium floor.

Finally, as has been repeatedly shown in this report, one of the crying needs of the Agricultural College is more room. The attendance has increased over one-half in the last four years. The college attendance has more than doubled. This

has called for a great increase in class rooms and laboratory space. As more advanced instruction is given, the larger the floor space required. Not a room in the Institution is unused. The granting of a new gymnasium would relieve this matter, at least temporarily. The present gymnasium and drill hall could be converted into class rooms which would help relieve the congestion for a short time to come. All in all, the Institution is in such a condition that a gymnasium seems indispensable. We are the only institution of advanced learning in the State today not possessing a gymnasium.

STATE VETERINARIAN.

The last Legislature created the office of State Veterinarian and provided that this officer should be a member of the Faculty of the Agricultural College of Utah. The reduction in the work in veterinary science at the College and the incessant demands made upon the State Veterinarian by the State has made this arrangement undesirable. The law, therefore, should be changed so that the State Veterinarian shall have no connection with the Agricultural College.

HEATING PLANT.

The Institution is in great need of an effective heating plant. At the present time one main and five smaller plants are maintained for the heating of the College buildings. The main plant is inadequate for the present needs, and with each new building a new plant must be installed. This is extremely wasteful both of labor and fuel. Moreover, the main heating plant is so located as to be of danger to the main building; and its arrangement with respect to moving coal and ashes and the economical use of heat is almost the worst possible. A central heating plant, placed possibly on the south side hill, low enough to be below all the buildings, would entail an expenditure of possibly \$25,000.00, but the annual saving in labor and fuel would in the course of a few years return the cost to the State. This change should be made as soon as possible.

REQUIREMENTS AND INCOME.

The following estimate of requirements is made upon the assumption that the College is expected to continue and develop its present lines of work; and upon the further assumption that the present attendance will continue and may increase.

The item for salaries and wages is based upon the present

schedule and will barely suffice for our needs. The items for equipment and supplies are over one-third lower than the estimates of the different departments. The items of light, power, fuel and insurance are practically fixed and will be wholly needed. The item for repairs and improvements is much smaller than the estimates, but probably sufficient to maintain the plant properly. The estimates have been made conservatively, and represent the true needs of the Agricultural College for the next two years, if it is to continue to do its present work, and to grow in attendance and influence.

Estimated requirements and income of the Agricultural College of Utah for the biennium July 1st, 1911, to June 30th, 1913.

REQUIREMENTS.

Salaries and Wages (on the basis of 1910-1911)	\$163,000.00
Additions to Teaching Force and Salary Adjustments	12,000.00
Equipment (for all departments, including library and livestock) . . .	35,000.00
Supplies, on basis of 1909-1910. (Including Mechanic Arts supplies, feed for live stock and supplies for all other departments)	30,000.00
Light and Power	6,000.00
Fuel	10,000.00
Insurance	2,000.00
Printing and Advertising	5,000.00
Postage, stationery, telegraph, telephone, etc.	3,000.00
<i>Repairs and Improvements:</i>	
Painting (including renovation of furniture)	\$2,000.00
Steam heating (including new boiler	3,500.00
Water-works and sewerage	800.00
Hard finish and calcimining	1,000.00
New floors and repairs on old	1,500.00
New steps for stairways	400.00
Window-glass, blinds and locks	500.00
Lighting system	800.00
Fencing and repairs	700.00

Roof for and raising Mechanic Arts Building	7,300.00
New roads (including cement walks)	1,500.00
Retaining wall for Woman's Building	500.00
Shed for Cattle yard	500.00
	<hr/>
	21,000.00
Total for Maintenance and Repairs . .	<hr/> \$287,000.00
INCOME.	
Morrill Fund (1862) (estimated) . . .	15,000.00
Morrill Fund (1890)	50,000.00
Nelson Fund (1907)	50,000.00
Fees (estimated)	15,000.00
	<hr/>
Total Income	\$130,000.00
Total Amount Required from the Legislature for Maintenance and Repairs	\$157,000.00

NEW BUILDINGS.

Request is further made for new buildings as follows:

Gymnasium and Drill Hall (estimated)	\$ 50,000.00
Greenhouse	2,500.00

The biennium now closing has been the most prosperous in the history of the Institution. The work of the College in behalf of the industrial workers appears to be appreciated by the State, so that the future is full of promise. The time has come when all men may receive a fitting education for their chosen life careers; and the Agricultural College is proud of its mission—to educate correctly the men and women who must perform the fundamentally necessary work of the world. The Institution asks only that such appropriations be made as, considering the revenues of the State, may enable it to do its work in the best possible manner.

Respectfully submitted,

JOHN A. WIDTSOE,

President.

Logan, Utah, Dec. 4th, 1910.

Departments of Instruction.

SCHOOL OF AGRICULTURE.

To the President of the College.

Sir:—The School of Agriculture has continued to increase rapidly in numbers during the past two years, and the standard of scholarship of those entering this course has increased each year. The number of high school graduates entering this course the present year has been far greater than ever before. This is no doubt in a large measure to be attributed to the introduction of agricultural courses into a number of our leading high schools. In the following table the registration of the corresponding time for the past six years is shown.

FOURTH WEEK SUMMARY.

Year Begin- ning Sept.	PREPARATORY				COLLEGE						Total Students Grand Total
	Tot.	Op.	1st.	2nd.	Fr.	So.	Jr.	Sr.	Sp.	Tot.	
1905	56	0	36	20	16	5	3	0	1	25	81
1906	42	3	19	19	18	5	2	2	4	31	73
1907	49	3	25	21	37	13	10	2	4	66	115
1908	88	4	49	35	29	30	14	9	5	87	175
1909	89	1	45	43	32	20	30	15	7	104	193
1910	90	—	42	48	35	27	23	43	—	128	218

The column of totals shows a steady increase for each year except 1906. The most striking thing shown by this table is that the number of preparatory students has remained the same during the past three years, while the total number of college students has steadily increased. Especially marked, however, is the change in the ratio of freshmen and seniors. In the early years, a number of students would reach the freshman or sophomore years only to drop out before graduation, while, at the present time, a very large percentage of the students entering

as freshmen remain to graduate, while those entering the upper classes from other schools are more than offsetting these losses, so that the junior and senior classes compare very favorably in numbers with the two lower classes. The present senior class of forty-three is probably remarkably large. Its size is due to a combination of a remarkably large class entering freshman in 1907, the most of which have stayed in school and a large number of high school graduates that later entered its ranks. Every junior of last year is back in school except one, and that one has gone to an eastern university.

The agricultural faculty has been increased as much as limited funds will allow and materially strengthened in several important particulars. The general scholarship of the faculty is steadily increasing, several members having been away during the past biennium for graduate study, while four members are away at the present time. The members of the faculty are working together in harmony and are in full accord with the purposes of the Institution. The student body is loyal and enthusiastic and the close association of advanced students and members of the teaching staff has not suffered through the increase in numbers, as a less proportional time of the instructors is now required in the elementary work.

Rapid increase in the number of advanced students, however, makes imperative the demands for a larger number and more varied elective courses so that each student may prepare himself for a special line of work. The number of college students in each of the courses is rapidly reaching the point where it will be necessary to divide even advanced classes into sections in order to accommodate them in the laboratories. The large number of courses offered and the division of the classes will necessitate a considerably larger teaching force than at present. The demands upon the agricultural faculty for extension work are also increasing and these can only be met by an increase in the number of instructors employed.

An increase in salaries has been made to the heads of departments during the past biennial period and moderate increases have been made to deserving instructors. The result of this policy has been most gratifying. For the first time in the recent history of the institution, at least, we have been able to meet the competition of other schools and have retained the heads of our departments, thus insuring the continuity of the work and much greater efficiency. The cost of living is, however, increasing and other institutions are making rapid ad-

vances in salaries so that our present salary basis is still considerably below that of similar institutions. In order, therefore, to retain our most efficient men, it will be necessary to still further increase our scale of salaries. Two of our heads of departments have recently had flattering offers from other institutions, but as a result of the policy of increasing salaries in recognition of merit, have decided to stay with the institution. If this policy is continued, there will be little difficulty in maintaining an efficient agricultural faculty. If, however, it is not, it would certainly result in a return to the continually disrupted condition brought about by the constant changes of a few years ago.

The Agricultural School, although it has been allowed a considerable increase in rooms and laboratories during the past biennium, is still much handicapped for want of room to adequately handle the increasing number of students. The constantly increasing number of upper class students is making this demand still more imperative. The chemical laboratory has been over-crowded for years and courses which should have laboratory work in connection are now given without it on account of the impossibility of providing accommodations for the students. The poultry industry is becoming more important in this western country, and, with the increased efficiency of our poultry department, a large increase in this work is to be expected. This will require additional room for class, laboratory and museum accommodations. The course in horticulture is becoming more popular and with the development of horticulture in our State and the recent reorganization of that department, there is no question but that the work called for will be greatly increased in amount. Already over half of the junior class have signified their intention of taking their major work in this course. With a little strengthening of our work in plant physiology and plant ecology, it will be possible for us to equip our graduates to accept positions in the Forestry Service. Plans for this are already under way. By the reorganization of the department, the work in horticulture is being placed upon a practical basis. This requires a considerable amount of laboratory work in connection with most of the advanced courses, which means that the department will need considerable more laboratory space, as well as instructional assistance. The entomological department is already overcrowded and with the return of the head of the department a number of students will specialize in this work, requiring additional instruction force

and additional room. Work in farm engineering is being introduced this year and in order to make that of practical benefit to the student of agriculture, it will require considerable space for the storage and handling of farm machinery.

It will be impossible to accommodate this increase within the limits of the present buildings on the campus. The present arrangement of agricultural departments in different parts of a large building is also very unsatisfactory. The only solution of the difficulty seems to be in the erection of a building for agricultural work. Such a building should be planned to accommodate the students for many years to come. It will probably be impossible to secure funds for the erection of an entire building suitable for this work, but if one wing of such a building could be constructed at the present time capable of adequately housing the chemical department and probably one other agricultural department, as well as furnishing temporary quarters for the work in farm engineering, it would temporarily relieve the present congestion and would be a source of considerable encouragement to the agricultural work. A wing such as described could be constructed for about \$50,000.00.

In order to carry on accurate experimental work in connection with a number of soil and crop problems of the State, a vegetation house is necessary. The entomological department is handicapped in its work on account of lack of greenhouse facilities and should have an insectary and office building. The agronomy department also needs a moderate amount of room of this character in order to carry on laboratory work in crop production during the winter season. For the work in horticulture, more greenhouse space is also needed. It will probably be impossible to meet all these requirements at the present time, but if a single large greenhouse structure could be erected at once and properly heated and equipped, it could be used for the vegetation experiments and insectary work during the summer season and be available to the horticultural and agronomy departments for propagation work during the school year. In this way, probably all of the pressing demands could be met. Such a building could be erected for about \$5,000.00.

The livestock of the College has been materially strengthened during the present biennium. There is, however, room in the present barn and equipment for a considerable number more of animals and in order to give students access to typical representatives of the more important breeds, a number of animals should be purchased. Provision should also be made for

strengthening the present dairy herds. Some of our sister institutions have demonstrated that by careful selection and careful purchasing, the efficiency of the herds may be increased to such a point that they become practically self-sustaining. In order to reach this point, however, it is necessary to weed out the poorer ones and to introduce new and better animals until the herd becomes established. With the small number of animals at present owned by the Institution, it has been possible to arouse considerable enthusiasm and to encourage a number of the farmers of the State to undertake the development of pure-bred herds. With \$7,500.00 more for the next biennium, it will be possible to materially strengthen the present efficiency of our livestock department. With this amount, it will also be possible to obtain sufficient animals so the experimental work can be undertaken, which will be of immense benefit to the livestock interests of the State. The present system of pastures and fencing is very inadequate and cumbersome. The animal husbandry department would be able to use the pastures to much better advantage if the present fencing were changed and if a certain amount of additional land were seeded to pasture grasses and fenced to provide for the increase in stock. While this is being done, the system of roadways around the pastures and fields should be materially changed and improved. If a plan could be worked out whereby the main roadway leading through the fields could be continued between the pastures to the north line of the farm and then carried westward past the barns, it would make it much more convenient for all departments concerned and provide a driveway whereby it would be possible to show visitors the livestock and fields of the Institution. This roadway could be built very largely by the labor of regular employees during the winter time, provided the new fencing was approved so that such roadways could be laid out. The fencing suggested would cost about \$750.00.

In the way of minor improvements, an open shed should be built over one side of the dairy yard to protect the dairy cows from the cold winds. A steer feeding shed, similar to the one used for sheep feeding, should be provided so the experiments in the production of younger and more valuable beef animals could be undertaken. The fencing of the poultry plant is getting old and should be renewed with up-to-date and movable materials. Besides these items, there will be of course a large amount of minor equipment needed to enable the laboratories to provide for the increase in students.

It is gratifying to be able to report the present prosperous and satisfactory condition of the School of Agriculture, and but little change seems to be required in our present policy to enable us to fit students for the practical work of building up western agriculture. Our graduates have been accepted by all the leading agricultural schools of the East and many of them have won distinction in their classes. The addition of one year to the requirement for entrance will make possible the re-arrangement of our courses and the inclusion of a number of helpful subjects. With the development of high school work throughout the State and the strengthening of our Church school system, it seems to me that it will soon be possible to still further reduce the high school work of the Institution and further strengthen the work in college courses.

Respectfully submitted,

E. D. BALL,

Director, School of
Agriculture.

Oct. 15, 1910.

SCHOOL OF HOME ECONOMICS.

To the President of the College,

Sir :—During the last two years notable changes have occurred in the School of Home Economics, which until February, 1910 was called the Department of Domestic Science and Arts.

At the last session of the Legislature an appropriation was made to remodel and equip the old dormitory for this department. At that time the domestic science laboratory was crowded into the basement of the main hall and the lecture rooms, offices, and rooms for the domestic arts department on the first floor were quite inadequate to meet the needs and growth of the department.

In May the work of remodelling the dormitory began, and though the building was scarcely completed the class rooms and laboratories were put into use during the following fall.

The wisdom of the Legislature and Trustees in making this change can only be judged by visiting the woman's building, and the work accomplished by the department in the future.

The equipment of the building is mostly new and has proved satisfactory: \$4,000 of the \$5,000 allowed by the Legislature has been spent for permanent equipment. The apportionment of this expenditure is estimated as follows:

Domestic Arts Department; cases, tables, chairs, sewing machines, incidental equipment.....	\$1,500
Domestic Science laboratories; cases, desks, stools, dishes, incidental equipment.....	1,000
Chemical laboratories; desks, chemicals, etc.	500
Office furniture	500
Lecture room, reading room, rest room, dining room, furniture, etc.	500
Total	<hr/> \$4,000

Much of the old equipment was sold to other departments, and in buying the new the aim has been to provide, without undue extravagance, that which was essential for up-to-date class work and departmental development.

The department already is deriving benefits from such a policy in regard to the equipment and doubtless the work will gain in reputation by such a method.

The *class work* has been developed and revised. College courses in home economics are still in the stage of development, but each year they become more settled along the general lines of applied economics, sciences, and art. Between September, 1908, and September, 1910, there has been some *change* in the courses offered. The courses in foods now given are: (1) A course in cooking for first year high school students; (2) a course in cooking for third year high school students and freshmen college students, which has as a basis manufacture of foods, and their selection and preparation; (3) a course in cooking for sophomore students, which has as a basis chemistry of foods; (4) a course in dietetics and nutrition for junior students, which has as a basis metabolism of foods and a study of diets for all classes of people; (5) a course in cooking which has as a basis the economic side of foods. The courses in demonstration cookery, and camp cookery have been discontinued as there was not a sufficient demand to warrant offering them.

The courses in sanitation, home nursing, and laundering have been somewhat re-arranged, otherwise they remain the same in the high school and college work.

A course in house decoration given by the art department and the domestic arts department has been introduced. The teachers' course in domestic science has been combined with the teachers' course in domestic arts.

In the domestic arts department the method of presenting

the plain sewing, and certain changes and modifications of the dressmaking course for high school students have been made. A college course (for juniors) in dressmaking has been introduced; and also a course in textiles. These additional courses have materially strengthened the work in the domestic arts department.

Further, the prerequisites for courses in domestic science and domestic arts have been carefully introduced.

The personnel of the teaching staff has shifted rapidly in the past two years. Miss Ellen A. Huntington, A. M., (Columbia University) became director of the department in July, 1909. For the two years preceding, Miss Blanche Cooper had been the acting director. Miss Inez Powell, B. S., resigned in 1909 and Miss Lizzie O. McKay, B. S., (Utah Agricultural College) was appointed instructor in domestic science. Miss McKay, B. S., and Miss Hazel Love, B. S., resigned in 1910 and Miss Florence M. Brown, A. B., (University of Wisconsin) and Miss Florence Dudley, B. S., (Utah Agricultural College) were appointed to fill the vacancies.

Mrs. Rhoda B. Cook, head of the department of domestic arts, was granted a leave of absence for the year 1909-10, and Miss Mary Parmelee, B. S., (Teachers' College) was procured as her substitute.

Miss Gertrude Vibrans, instructor in sewing, resigned in 1909 and Miss Jean Crookston was promoted from an assistantship to an instructorship. Miss Coral Kerr and Miss Lucille Jenson, students, were appointed assistants. In 1910 Miss Kerr was given charge of the millinery work and Miss Katherine Adams, a student, appointed as an assistant.

The incoming teachers have almost invariably had better preparation for teaching than the outgoing teachers which has strengthened the work of the department.

REGISTRATION.

	1908-9	1909-10	1910-11 (to Oct. 17)
Manual Training	74	107	67
College Preparatory	39	17	15
College	40	42	45
	—	—	—
Total	153	166	127

Certificate students	3	6
Graduates	11	9
Summer Session	(1909) 17	(1910) 37

Courses	1908-9	1909-10	1910-11
D. S. 1	46	66—1st Sem. 59—2nd Sem.	55
D. S. 2	24	14	16
D. S. 3	21	12 (2nd Sem. Sub.)	
D. S. 4	19	54	26
D. S. 5	30	—	12
D. S. 6	15	—	—
D. S. 7	6	18	9
D. S. 8	13	20 (Cards not in)	
D. S. 9	—	19 (Cards not in)	
D. S. 10	6	14 (Cards not all in)	7
D. S. 11	9	19	9
D. S. 12	—	13	2
D. S. 13	3	11	6
	—	—	—
	192	319	142

Courses	1908-9	1909-10	1910-11
D. A. 2	42	44	41
D. A. 3	17	27	28
D. A. 4	16	21	—
D. A. 5	10	8 (not given)	
D. A. 6	14	17 (cards not all in)	10
D. A. 7	15	21	14
D. A. 8	23	23 (not given)	
D. A. 9	13	23	—
D. A. 13	—	14	13
D. A. 14	—	—	2
D. A. 11	—	—	15
	—	—	—
	150	198	123

From January 25, to February 5, 1909, a housekeepers' conference was held in the department, which was open to all women of the State. There were twelve women in attendance, seven of whom were from out-of-town. The conference consisted of laboratory work in cooking, sewing, and sanitation, and a public lecture every afternoon on subjects of interest to

housekeepers. A fly exhibit was shown in connections with the conference. The conference was designed and seemed to meet the needs of those women who desire suggestive instruction in improvements in methods of housekeeping, and who have not the time or means for taking the regular work. As this first conference proved so successful, another will be offered during the coming year.

A conference of the teachers of home economics in the intermountain region was held February 4 and 5, 1910. There were about fifteen teachers in attendance. The course of study in home economics for high schools was the special topic considered with a view to promoting the high school work of the State. Probably a second meeting will be held during the coming year.

A course of study for eighth grade students in cooking and sewing has just been prepared and sent to the State Superintendent.

The Home Seekers' Circle, a club for the home economics students, was re-organized in 1909 and became The Home Economics Club. During the year 1909-10 it held a sale of Christmas cards, and an exhibition of Japanese prints. The club furnishes the girls further interest in their work and affords an opportunity for expression of executive ability and social intercourse.

Upon the request of the president, several dinners and luncheons have been served by the department throughout the year. Some of the guests have been: Governor Spry, the Trustees, visitors from the Oregon Short Line, Logan bishops and ministers, and business men, the State Board of Education, and Captain Lenehan.

The extension work has been considerably developed. Miss Hazel Love represented the department at most of the institutes in 1909-10. Charts, slides, and printed outlines were prepared which strengthened the home economics work. In several towns the women were organized into domestic science institutes, much as the farmers are organized into farmers' institutes. Such organizations seem to make the institute work more profitable and effective. Miss Florence Dudley has charge of the work for the coming year, which promises excellent results.

The department has exhibited each year at the State Fair. In 1909 Miss Love gave a short lecture on home economic subjects every day. A better exhibit was shown in 1910 with Miss Dudley in charge. Food values, the fly exhibit, dresses, hats,

and underwear were some of the features of the latter exhibit. A canned fruit exhibit was sent to Chicago in 1909 to be shown in connection with the Land Growers' Association.

The department has offered work for the summer session in 1909 and 1910. In 1909 the work was planned and in charge of Miss Blanche Cooper; in 1910 the work was planned by Miss Huntington but in charge of Miss McKay. There were eighteen students registered in 1909; and twenty-nine students registered in 1910.

In the coming biennium, beginning July 1st, 1911, I recommend: (a) that one, and possibly two instructors in domestic arts be appointed in place of the student assistants; that if the work continues to grow, another instructor in Domestic Science be appointed, and so far as possible the staff should be college graduates; (b) that the equipment receive renewals and additions.

(1) A proper ventilation system should be installed, (cost, \$1,000 to \$1,500.)

(2) Retinting of laboratory walls; painting in basement; where the woodwork is shrunk it should be stained and waxed. (Estimate of cost, \$200 to \$300.)

(3) Steel lockers. (\$1,000 to \$1,200.)

(4) New electrical devices will be needed. (Estimate of cost, \$300 to \$500.)

(5) New cooking utensils for renewal and additions. (\$300 to \$500.)

(6) Domestic Art equipment. (\$300 to \$500.)

(7) Furniture for class room in home nursing. (\$200.)

(8) If cases are not made previously, these should be done. (\$1,000 to \$1,500.)

(9) Lantern and slides. (\$200 to \$300.)

(10) Nursing material. (\$500 to \$800.)

(11) Pictures. (\$200.)

(12) Incidentals. (\$500 to \$800.)

(13) Grading around building. (\$500 to \$600.)

(14) New steps to building. (\$300 to \$400.)

Total, \$6,400 to \$9,500.

(c) That a generous provision be made for reference books in the library; and for supplies. (Estimate, \$800 per annum.)

I believe that the growth of the department as a part of the Utah Agricultural College lies in developing strong college courses as they are already outlined; and further in undertaking

experimental work independently or in connection with the other departments of the college.

In order to secure satisfactory results from such experimental work I believe it will be necessary to employ a qualified person for that work alone or to relieve the present staff of some of the incidental work. I feel that the present system of registration is injurious to the best results of the department. The students and instructors are dissatisfied with the confusion and lack of attention which occurs during the first few weeks of school, and from which it is difficult to recover. I believe it is an unnecessary waste of expensive service, and that the work could be satisfactorily performed by the Registrar with no loss of personal interest of instructors or students.

This department is prepared to outline a four years high school course and revise the college course accordingly. At the time I shall probably recommend that the student who is not preparing herself to teach be allowed greater freedom in electing her course during the junior and senior years.

The department feels strongly the need of a college physician and a dean of women. The girls often come to us with slight ailments which can be corrected with little attention from a physician—and with a physician thus appointed the girls would attend to the matter more promptly. Just from casual observation during the last year I think I must have asked ten to twelve girls to go to a physician.

The girls need a dean of women who shall be unhampered by departmental affairs, to look after their general welfare. At present, if the girls need or wish advice or assistance it is offered (if at all) by any man or woman in the Institution; the relief from such duties would not lessen the interest of instructors in the welfare of their students but enable them to give more valuable assistance through a lack of dissipation of energy. I believe that more parents would send their daughters here were there more careful supervision of their general welfare.

Respectfully submitted,

ELLEN A. HUNTINGTON,

Director, School of
Home Economics.

October 17, 1910.

SCHOOL OF COMMERCE.

To the President of the College,

Sir:—The needs of the State of Utah seem to demand that the School of Commerce of the Agricultural College of Utah maintain a short high school course in commerce for the training of office employees, and also a college course for the training of business managers and captains of industry. The latter, however, is the primary purpose of the school. In addition to the foregoing aims the course provided is the very best preparations for young men who intend to pursue the study of law.

For a great many years commercial education throughout the country has been neglected. Five years ago this school itself was on the decline. Recently, however, a marked increase in interest has been shown in this form of education. Likewise, the work in this school has responded to public sentiment and to the peaceful conditions established within the school itself until this year bids fair to record the largest registration in its history.

For a young man who is willing to prepare himself well and to begin at the bottom and work up, commercial education offers a large field with the greatest returns.

The extensive introduction of economics in the course in commerce, as well as in the school at large, judged by the increased registration in economics subjects, has filled a need. In this connection it may be well to say that the employment of Mr. George B. Hendricks, A. M., as assistant professor in economics has made it possible to offer more work and has also strengthened the school. We regret the voluntary withdrawal of Professor J. P. Goddard from the school and the Institution and its work. He was strong and successful in accounting. His loss will be felt, but in Instructor P. E. Peterson we feel that we have a competent successor.

The purchase of the new supply of typewriters and the new adding machine have greatly benefited the work in the department of typewriting and accounting. The financial help thus given has been fully appreciated.

The School of Commerce needs more room on the third floor.

The revised course of instruction which will go into effect next year should provide for instruction in the law of bills and

notes, sales and accounting. The accounting should be college work and so arranged as to be pursued by students in the junior and senior years. If this is done it will place this school among the strongest and best of its kind.

REGISTRATION OF THE SCHOOL OF COMMERCE.

1907-8	127
1908-9	138
1910-11 (todate)	108
Seniors	4
Juniors	6
Sophomores	8
Freshmen	10
Third Year	9
Second Year	29
First Year	40
Special	2
Winter Course	
Economics I.	24
Economics II.	40
Economics IV.	24
Economics V.	6
Economics VI.	12
Economics VIII.	13
Economics X.	5
Economics XI.	20
Accounting I.	34
Accounting (Winter Course)	
Accounting II.	42
Accounting III.	15
Typewriting I.	46
Typewriting II.	7
Stenography I.	20
Stenography II.	4
Stenography III.	3
Penmanship	31

INSTRUCTORS.

George Thomas
 George B. Hendricks
 Parley E. Peterson
 Canute Peterson
 Bessie Day
 Leroy Stevens

Respectfully submitted,

GEORGE THOMAS,

Director, School of Commerce.

Oct. 22, 1910.

SCHOOL OF MECHANIC ARTS.

To the President of the College,

Sir:—In compliance with your request of October 5, I have the honor to submit the following report:

Inasmuch as my work here dates from the opening of the present school year I cannot say much about the work prior to that time; statistics show that the total registration in the department of mechanic arts for the year 1909-10 was 108. This year, to date, 104 have registered, in the following courses:

Carpentry	62
Forging	31
Machine Work	33
<hr/>	
Total	126
Students working in more than one shop	22

As there are, doubtless, many more students yet to register, and the short courses have not yet begun, the total number of students taking work in this department this year will considerably exceed the number of last year.

The courses given at present are as follows:

Carpentry, Cabinet Making and Building Construction, given by A. J. Hansen and H. P. Madsen.

Wood Carving, David Hughes.

Forging and Carriage Building, Aaron Newy and H. J. Webb.

Machine Work and Mechanical Drawing, E. P. Pulley, B. S.

These departments are all doing good work but it is hoped that by adding to our courses and introducing more theoretical work a larger number of students may be induced to complete the entire course of four years which would add much to their effectiveness.

In view of the fact that there is a very considerable demand for a good course in horse-shoeing, which is not being met, I would recommend that an instructor in this branch be employed; when not giving instruction in his specialty, to act as assistant to the teacher of forging and to repair farm machinery. We have in the present carriage shop a room well adapted to this purpose which would need only the addition of one or two forges, with small tools, to fit it for the work of horse-shoeing.

Our mechanical drawing room is now located in the main building, which means that it is too far from the shops, and that drawing and shop work are not as closely correlated as they ought to be, and the freehand drawing for this department is also in the main building and is subject to the same criticism. This work should be moved to the mechanic arts building where the shops and the drawing rooms would be near each other, and where they could co-operate, greatly to their mutual advantage. This move would leave vacant two large rooms for the use of other departments that are now over-crowded.

In order to provide the necessary space in the mechanic arts building, I would recommend that the north and south wings of the western portion of the building be increased to two stories in height to correspond with the central portion of the building which is already two stories high. This would enable us to use the present carriage shop for horse-shoeing, as above indicated; it would give us the larger carpenter shop for the carriage building work, where this would be in close proximity to the woodworking and smithing departments, which is very desirable; it would give us the smaller carpenter shop for an exhibition room, all on the first floor. The second floor would be used for carpentry, in the two south rooms, mechanical drawing in the central room, the adjoining room to the north for freehand drawing and the north room for recitations and lectures. This change would not be very expensive, particularly when we consider that the roof of the building is now in very bad condition and should be renewed immediately as stock and tools are being injured by the water that leaks through. It would also be possible to use most of the timber in the present

roof for the construction of the new one. The main expense would be for increasing the height of the walls one story and the addition of a second floor. The building was designed with this change in view; the foundations are proportioned to carry the load; consequently there will be no expense for this item.

Our machine shop is badly overcrowded as the instructor in that department is obliged to devote half of his time to the teaching of mechanical drawing. He needs an assistant who could take one section in machine work and devote a part of his time to the foundry which ought to be operated but is now out of use for lack of an instructor. With another man and additional machinery, as per detailed list attached, our work in this department could be rendered much more efficient. Some of our lathes, which went through the fire, are now being repaired by students but we need counter shafts and belting for them, and, with the addition of one 20 inch by 12 inch lathe, we would be able to build several of which we are badly in need.

In addition to our work in blacksmithing, the students who are studying agriculture should be taught to repair farm machinery. Neither instructors nor pupils like this as well as new work but, in my opinion, a reasonable amount of it should be given in view of the fact that most of the mechanical work done on the farm is in the nature of repairs. In this connection I would recommend that a stock of repair parts most often needed be purchased and that suitable cases be built to contain this material. If this were done nearly all the repairs to our farm machinery could be made by students. This would give the boys necessary practice and save money to the Institution.

We are co-operating as far as possible with all departments but should be especially useful to the department of agriculture for which we are now constructing an experimental harrow for use in its work in dry-farming.

Our woodworking department is in need of a larger motor. The one now in use is of fifteen horse power capacity and is very often overloaded with the result that fuses are blown out so frequently that we have to buy them by the box and this entails considerable expense as well as loss of time. I would recommend the purchase of a twenty-five horse power motor for this department and the removal of the old motor to the testing laboratory, there to replace the gasoline engine now used for operating the testing machine. This gasoline engine could be used to good advantage by students in farm mechanics. The

woodworking department also needs a small dry kiln which we could construct ourselves if the materials, piping and lumber, were purchased. We also need more heat in the stock room and a new roof over that part of the building as the lumber there stored now gets damp and swells every winter.

DETAILED STATEMENT OF NEEDS FOR THE TWO YEARS
BEGINNING JULY 1, 1911..

MACHINE SHOP.

1 Assistant	\$1,000.00
3 Countershafts	215.00
Belting	50.00
Small tools, files and supplies.....	1,085.00
1 20 inch by 12 inch lathe.....	650.00
	<hr/>
	\$3,000.00

FORGE SHOP.

1 Instructor in Horse-shoeing.....	\$1,200.00
Equipment for shoeing shop.....	250.00
Fuel	400.00
Tools	100.00
Supplies	350.00
Repair parts for farm tools.....	250.00
	<hr/>
	\$2,550.00

CARPENTER SHOP.

Dry Kiln	\$ 75.00
Supplies	3,000.00
25-Horsepower motor and setting.....	550.00
Small tools and equipment.....	200.00
	<hr/>
	\$3,825.00
Freight and express, all shops.....	200.00
Raising building to two stories.....	7,296.00

FOUNDRY.

Supplies	200.00
Fuel	200.00

AGRICULTURAL ENGINEERING.

This work has been commenced and is making such progress as it can under existing conditions. Instruction is being given in the construction and cost of farm buildings including fences, gates and bridges, their design, cost and location, and work with farm machinery and farm motors will be taken up next term but we have no building for this work. One room in the mechanic arts building, the testing laboratory, has been partly devoted to the storage of such farm machinery as it will contain but it is entirely inadequate for our needs. We have the offer of all the machinery we want, for purposes of instruction, provided we can furnish a suitable place in which to house it.

In view of these facts I would recommend the erection of a building according to the accompanying plans. This building could be of the plainest possible construction with very little interior finish and would amply repay its cost which has been estimated at \$20,000.00.

The chief expense on the machinery would be for freight which we would have to pay one way. The manufacturers would pay the return charges in most cases.

Respectfully submitted,

WILBERT S. DREW,

Director, School of
Mechanic Arts.

December 1, 1910.

THE SCHOOL OF GENERAL SCIENCE.

To the President of the College,

Sir:—There are 92 students now registered in the School of General Science; 63 of this number are in the College. Five of these students are doing post-graduate work, ten are seniors, sixteen are sophomores, and twenty-six are freshmen. It is gratifying to note the increase in the number of students doing advanced work.

As the work in this school is elected from the various departments of the College, there is comparatively no additional expense required for the maintenance of the school. The demand for the course in general science is increasing; as it provides a broad general education and also admits of specializing

in the last year of the course. Students desiring to enter professional schools elsewhere find the course in general science especially well adapted to their needs. The graduates from this school, who have gone into practical work have found themselves well equipped for their work and have been uniformly successful.

Yours truly,

J. W. JENSEN,

Director, School of
General Science.

December 1, 1910.

EXTENSION DIVISION.

To the President of the College,

Sir:—This department recognizes the splendid increase in attendance at the College, and the gratifying enrollment in the courses in agriculture and home economics during the past few years. It is well known, however, that under the most favorable conditions, only a small percent of the farmers and farmers' wives or even the boys and girls on the farms can come directly under the influence of the College.

While the principal purpose of the College is that of educating and training the young men and women of the State who can spend their time there, yet it would be extremely unfortunate if the teachings and influence of the College and the information and experience gained at the Experiment Station would not be placed within the reach of those who are unable to leave their homes to attend school. With the end in view of taking the work of the College and Station out to the people, the Legislature of 1896 created the Farmers' Institute authorizing the faculty of the Agricultural College to hold meetings in each county of the state at least once each year and appropriating annually \$1,500 to defray the expenses.

The Legislature of 1909 changed the law slightly, placing domestic science on a par with agriculture in the scheme of instruction. The annual appropriation was increased from \$1,500 to \$5,000 and movable schools of agriculture and domestic science were authorized. The change in the law and increased appropriation resulted in greater efficiency, increased interest and public sentiment has at last been thoroughly awakened in favor of this kind of work.

The Extension Department has in charge the following lines of work.

Farmers' institutes are held in the counties not provided for by other forms of extension work and continue usually for two days. At these institutes four sessions are held for the men, four sessions for the women and there are two conjoint sessions. It is gratifying to report that there is a growing dissatisfaction with the farmers' institute, the people much preferring the week's school. The institute, however, serves an excellent purpose in sparsely settled communities and remote regions in offering encouragement and assistance to new settlers.

A form of institutes inaugurated in Salt Lake county during the year is proving very popular. On the last Thursday of each month the farmers of Salt Lake county meet at Murray where instruction in agriculture is given by some member of the extension staff.

Farmer's and housekeepers' schools of one week's duration have proved to be very popular. Our schools, as organized, provide for instruction during the day time for the men, and during the same hours for the women, and in the evening popular lectures are given. The men have received instruction along the lines of soils, irrigation, dry-farming, horticulture, poultry raising, insect pests, etc., and the women have received instruction in home economics. The evening discussions have usually consisted of lectures along matters of interest to the farm and home and men of prominence in the state and educational affairs have assisted in this work. At the evening sessions too, some form of entertainment is usually provided, this consisting as a rule of musical exercises.

For the week's instruction the men have been charged an entrance fee of one dollar and the women an entrance fee of fifty cents. Before holding these schools the farmers' associations, commercial club, or high schools are required to guarantee that at least one hundred men and fifty women shall enroll for the course.

The instructors are drawn, as a rule, from the Faculty of the Agricultural College though assistance has been received from some instructors in the various high schools in the State and from practical and successful farmers. The department is in receipt of numerous letters and comments on this form of work; as an illustration of the sentiment prevailing I take one

sentence from a letter recently received from M. J. W. Paxman of Nephi: "We have had many farmers' institutes in this section which have done much good, but the impressions were never made nor the good done the farmers that has been done by these schools; one can hardly estimate the good that will follow a continuation of this work."

Important features of the housekeepers' and farmers' schools during the biennium have been the stock judging demonstrations, at which horses, cattle, sheep and hogs were brought out and under the direction of Professor J. T. Caine, III., these demonstrations were given. In the domestic science section bread-making contests were an interesting innovation, and excited a lively contest among the women taking the course.

The writer is a member of the committee of the American Association of Farmers' Institute Workers and has had occasion, during the year, to prepare a report concerning the movable schools. He was delighted to find, after a thorough investigation, that Utah stands in the front rank in this form of extension work. True, with our limited funds we are not able to do the work as extensively as has been done in the wealthier agricultural states like Kansas, Ohio, Iowa and Nebraska, but the work done here will compare very favorably with the work done in any of the other states. We cannot too strongly recommend this kind of work. Where the institutes are held there is a timidity and strangeness creating a barrier almost impossible for the institute workers to overcome in a few sessions. Where they are extended for a week this formality is banished and the freedom of expression and exchange of experience results in great good.

As soon as sufficient funds can be provided for this purpose these schools should be held in every county of the State, at least once in two years.

Another form of extension work from which excellent results are expected is that in which an effort is made to reach the young men and women of the high schools. Most of the villages and cities in Utah are dependent upon Farm and the farms surrounding them for their existence Home Lectures. and the high schools in these communities draw their students largely from the farms.

We want, through the Extension Division, to promote the interests of industrial education through these schools. A schedule of lectures has been prepared, outlining courses of in-

struction in the theory and practice of agriculture and home economics.

The time is here when the friends of this form of education should not hesitate to assert themselves in favor of including agriculture and domestic science in high school programs.

A recent innovation in extension work is the operation of farmers' demonstration trains over the lines of the railroads of the State. These trains are equipped with special cars, carrying an exhibition of improved farm implements, farm literature, appliances for farm homes, improved seed grains, etc. There were other cars for lecture purposes and for the accommodation of the lecturers and railroad officials.

These trains are operated and furnished by the railroad companies and the demonstration material and lecturers are supplied by the College. Two years ago such a train was run through the state, reaching every town adjacent to the railroads. During the past year one of these trains was operated over the lines of the Oregon Short Line Railroad company. The purpose of this train was to call attention to the proper methods of orchard heating and potato culture. The train made stops in Davis, Weber, Boxelder and Cache counties. At the important places stops of one hour were made. Sessions were held at Brigham City and Logan in the evening, where there was a large gathering of farmers and farmers' wives, arranged for by the commercial clubs of these cities. The total attendance at the lectures given during this tour was 2,161.

One of the direct results of the operation of this train was the creation of a sentiment in favor of orchard heating for the prevention of frost, preventing this year, the loss of thousands of dollars worth of fruit.

During the present season a dry-farming and dairying special is being operated over the Oregon Short Line Railway in co-operation with the Extension Department of the University of Idaho. Similar work will be undertaken over the Salt Lake route and the Rio Grande Railroad.

The work of preparing and arranging exhibits for the State Fair and of visiting and serving as judges in the various county fairs also comes under the Extension Department. At

the State Fair the exhibit of the Agricultural College has excited much favorable comment. These exhibits are educational in their character and have done much to awaken a favorable sentiment towards agricultural education. The State Fair Directors have given a building to the Agricultural College and during the past two years the entire building has been occupied. In addition to the exhibit, instructors from the College are constantly on hand to answer questions and give assistance. Stereopticon lectures have also been given each year and these have been attended by thousands of citizens of the state.

Representatives from this department have also visited the various county fairs and assisted in placing awards on exhibits and frequently have held meetings encouraging this kind of work. This department has also assisted in preparing exhibits outside of the state and this feature of our work is by no means an unimportant one.

The Extension Department has also furnished lecturers at the State Normal School. It is realized that the public school teachers exert a great influence with their students and in our efforts to win converts to rural life we feel that we need the co-operation of the public school teacher. Lecturers from the College have therefore appeared before the students of the Normal School regularly during the past two years.

The writer has personally heard favorable comments throughout the state concerning the character of the lectures given. In remote communities teachers have told the writer that the inspiration received and the encouragement given during these lectures has been of much value in awakening within them an appreciation of the value of farm life.

In addition to the above outlined forms of extension work the Director of extension work answers thousands of inquiries each year and meets and confers with hundreds of farmers who come for advice and assistance. The office of the Extension Department is maintained at Salt Lake City and farmers throughout the state meet at this office to obtain answers to inquiries and problems that come to them. Scarcely a day passes without a half dozen or more such conferences being held. Visitors traveling through the state and making inquiries regarding the pos-

sibilities here are usually directed to this office, and it is felt that much good has resulted from this form of the work.

The Director also edits the *Deseret Farmer*, the official organ of the Agricultural College Extension Department, made so by vote of the Board of Trustees. This paper goes each week into the homes of eight thousand subscribers and the writer has frequently heard the expression that aside from the Agricultural College itself, no factor has been so potent in influencing improved agricultural conditions in this state as has the *Deseret Farmer*.

The Director of the Extension Department too, has been unable heretofore to devote his entire time to extension work. He is on the Experiment Station staff and has charge of the dry-farming experimental work. This necessitates frequent trips through the state and requires considerable time in tabulating results, and getting them ready for bulletin form.

The increased appropriation enabled us to add considerable equipment, though the supply is not at the present time by any means adequate. A number of our lectures are now illustrated by means of lantern slides and with the additional apparatus the work in the Extension Department has become a real live entity, and thousands of farmers have been reached and benefited who would not otherwise have come under our influence. A number of traveling trunks and cases have been supplied so that the department is in much better condition in this respect than heretofore.

We desire very much to enlarge upon our present organization and to do this we will require additional help to effectually carry on the extension work in this State.

Plans for the Future. The Director should be enabled to give his entire time to it. In addition he should have another man who would devote his entire time to the service. An instructor in domestic science is already provided for; the full time of a clerk in this department is also essential. To pay the salaries of this force, provide illustrative apparatus and equipment, pay traveling expenses, advertising bills and the printing of the annual report, the fund now provided is entirely inadequate and should be increased. There is a great need for this form of extension work; nature has placed within our reach resources and opportunities that if properly utilized will make Utah a rich agricultural state. We need to

offer encouragement along all lines of agriculture but particularly on the subjects of a rational use of irrigation water, horticulture, dry-farming, dairying and poultry raising. Women on the farm are in no less need of instruction.

If there is anything of vital importance to the people of this State it is some means by which the newer agriculture may be most widely and clearly disseminated. The writer knows that there is a demand on the part of the farmers and farmers' wives for the kinds of instruction that this department is able to take to them. There is a commendable desire for knowledge and the department should be enabled to satisfy this to the fullest possible extent. Money invested in this kind of work finds quite a ready return in the increased production. As an illustration of the esteem placed upon this kind of work I quote His Excellency, Governor Wm. Spry, in an address delivered before the Farmers' and Housekeepers' School at Provo in February, 1910. "The results obtained at this school are evidence that good work is being done by our Agricultural College especially through its Extension Department and that the money that is being spent in this direction is not being spent in vain. I am happy that I have been able to assist in securing a small appropriation for this work from the last Legislature. The appropriation for this work is not enough, it is true, but at that time we gave the Extension Department all that we could afford or thought that we could afford, but I want to say to the Director of the Extension Department, to his assistants, to the good people of Provo and to the people of the State generally, that with the results secured by this department through the state that the department should receive much more money from the next Legislature, and I will do all that I can to secure an increased appropriation."

I deem it but proper to say that the success of all the schools and institutes has been due largely to the cordial cooperation and support of the state administration, to the Board of Trustees of the College, to the President and Faculty, and to the various commercial clubs, farmers' organizations, etc., throughout the state. We desire also to acknowledge the assistance of the local and state press, who have been most helpful in all of our work; they have effectually called the attention of the farmers to the necessity of their attendance at these institutes and schools. It is a pleasure to say that during the period covered by this report, 265 distinct sessions for men have been

held at various places throughout the state with a total attendance of 25,788; that 135 sessions have been held for the women with a total attendance of 11,143 and that 54 general sessions have been held with a total attendance of 10,735, or a total attendance during two years at all sessions of 47,835. This should not be interpreted to mean there were that many individuals in attendance but that this represents the units of attendance.

FINANCIAL REPORT.

July 1st, 1909 to October 1st, 1910.

REVENUE.

State Appropriation (two years)	\$10,000.00
Receipts from Schools held	611.95
Total	<u>\$10,611.95</u>

EXPENDITURES.

	Expended	B. & R.	Total
Traveling Expenses	\$1,933.38	\$ 88.45	\$ 2,021.83
Printing and Advertising .	892.43	606.37	1,498.80
Equipment	1,029.53	.....	1,029.53
Supplies	262.72	24.00	286.72
Salaries and Labor	3,233.34	1,912.50	5,145.84
Overdraft (July 1st, 1909)	225.11	.....	225.11
Total	<u>\$7,576.51</u>	<u>\$2,631.32</u>	<u>\$10,207.83</u>

Balance on hand

\$404.12

The principal need of this department as already mentioned in this report is for additional help. The Director should have an assistant; one or more men who can devote their entire time to extension work. These men could spend their time during institute season in attendance at meetings and during the summer season could visit among the farmers and give them much practical advice and many helpful suggestions.

We feel that we have already drawn too much upon the time of the men who are engaged in teaching at the College.

Considerable complaint is made when teachers leave their class rooms for any length of time and this would be obviated very largely by the addition of one or two men to the extension staff. The fund for the extension work should be increased at the coming session of the Legislature to at least \$7,500.00 annually.

Respectfully submitted,

LEWIS A. MERRILL,

Director Extension Division.

December 1, 1910.

THE EXPERIMENT STATION.

To the President of the College,

Sir:—The following is a very brief statement of the activities of the Utah Experiment Station for the past two years, together with an outline of plans and requirements for future work.

Irrigation and drainage has been one of the main lines of work of the Utah Experiment Station for several years and during the past six years has been carried on in co-operation with the Office of Irrigation and Drainage. Drainage Investigations, U. S. Department of Agriculture.

During the first years of these investigations, the major portion of the work was upon field crops and was carried on upon the Greenville farm. The results of this work are in process of publication and are proving to be very valuable. During the past two years, the major portion of the time has been spent on the investigation of the influence of water on fruit crops and sugar beets. For the work in orchard irrigation, it was necessary to co-operate with orchard owners and the use of the peach orchard of Valentine Brothers, at Brigham City, was secured for that phase of the investigation. It will require a number of years to ascertain the variations due to seasons and soil conditions, age of trees and the amount of crop carried, etc. The results so far secured have been striking and show the wonderful possibilities of investigation along these lines.

The subject of drainage is becoming more and more important in our irrigated sections. Co-operative drainage investigations have been carried on in a number of localities in the State; in many drainage districts assistance has been rendered in determining proper methods of attacking their particular problem. The work at Huntington has been highly successful

and good crops of grain are now being taken from land that was formerly an impassable bog. The methods used in the first experiments at St. George were not successful but the conditions have been further investigated and the defects remedied and a system is now in operation which has lowered the water table to the depth of drains and it only remains to complete the washing out of the alkali to reclaim this area. The work in drainage as a whole has been highly successful and calls for assistance are coming in more rapidly than it is possible to care for them.

The work in irrigation and drainage is very important in the further development of the State. Especially is this true in view of the widespread tendency towards orchard planting at the present time. The proper handling of water upon orchard areas is a question upon which there is practically no scientific information and the results of these experiments will be looked forward to with great interest by the people of the entire western country. As orcharding becomes more prominent, the question of being able to protect the trees from the injurious effects of ground water becomes more and more important and the drainage problems of this nature are even now among the most important that we have. The United States Department of Agriculture recognizing the need of further information along these lines, and approving of the character of the work being done by the Utah Experiment Station, offers to continue the co-operative investigations now under way and to appropriate \$10,000.00 for the continuation of the work, provided the State does the same.

The extreme drouth of the past season, which, to the uninitiated presaged disaster to the entire arid farming interests, proved to be its greatest blessing. The thousands
 Arid Farming. upon thousands of acres of waving grain that successfully withstood the months of burning sun and wind and finally yielded a profitable crop proved conclusively the soundness of the principles that have been worked out by the arid farming investigations of the Utah Experiment Station. After the demonstrations of the past season, little need be said as to the success of the experiments so far carried on. No money ever invested by the State of Utah has ever produced larger returns or founded a greater and more far-reaching industry. Many problems, however, remain to be solved. The conditions existing in different valleys, the different climates

and different soils still need investigation in order to warrant recommendations as to the best methods to be employed. The original investigations were all undertaken within what was then supposed to be the limits of arid farming possibilities. The success of the past season has warranted the belief that immensely greater areas than have been anticipated are capable of reclamation when still further investigations have been carried on and methods perfected. The great problems of developing grains and grasses suitable for the arid farm areas is still before us. Rational farming demands even greater variation in crop rotation than this, and experiments are under way with different crops in the hopes of meeting these needs. Milling tests of the arid farm grains are being carried on and it is expected that another industry will be added to the list of achievements of the State and will at the same time increase the profits of the arid farmer. An appropriation of \$10,000.00 for the next biennial period for arid farm investigations will be sufficient to continue the plant breeding work under way and to carry on the investigations outlined.

At the beginning of the past biennial period, the work on the Southern Station was largely reorganized, a large amount of variety testing work which had been carried on was discontinued and an effort made to inaugurate commercial work in fruit growing. In order to do this, a large amount of top working of poor varieties of peaches over to Elbertas was undertaken and commercial orchards of Elberta peaches, English walnuts and Flame Tokay grapes were planted. In addition to this, a sufficient area of Thompson's seedless grapes was already in bearing to yield commercial results. The plantings of grapes and peaches will be coming into bearing in the next year or two and will then give us an opportunity to test the commercial possibilities of this section. During the past year, plans have been under way to attempt a much larger amount of strictly experimental work on this station and to this end a scientific assistant has been employed for work in this locality. He is now preparing for publication the results of the variety tests and will be able to inaugurate considerable experimental work with the coming spring.

The top grafting work on peaches did not prove successful in producing a bearing orchard on account of the fact that the location of this orchard is gradually becoming charged with al-

kali and the trees, as the result of bad water conditions, have many of them died and most of the rest of them are at this time unproductive and will be removed. This only affects the lower section of the experiment farm, but before this can be used for further experimental work it will be necessary to reclaim it by means of drains. Investigations are now under way to ascertain the best method of taking up this work. In the meantime the land will be cleared of the dead trees and seeded down to alfalfa, in which it will be allowed to remain until reclaimed and ready for planting to fruits again. All of the lands of this region are lacking in humus and it is hoped by this method to place the land in much better condition than it formerly was, for fruit growing.

In order to fully develop the fruit industry of Southern Utah, it will be necessary to take up considerable work outside the confines of the southern station, as many of the most profitable crops of that region do not thrive on the particular site chosen for the experimental farm. By taking up co-operative work with the different fruit growers in different sections, it will be possible to begin at once experimental work on bearing orchards of nuts, cherries, peaches and many different varieties of grapes, as well as upon small tracts of pomegranates, figs, pecans and other subtropical varieties. In this way, much more can be done to stimulate the development of a fruit industry with the same amount of money than could be accomplished if it were necessary to wait for these fruits to develop upon the experimental farm. I would therefore strongly recommend that the further appropriations for the maintenance of this substation should include the words "and for co-operative fruit investigations in Southern Utah."

The grape leaf-hopper has been seriously abundant in the southern part of the State for the past two years and has greatly reduced the salable production of the vineyard. Experiments are under way looking to the control of this pest and it is believed that methods have been devised whereby its damage can be prevented for the coming season.

When reorganized under the plans outlined above, I believe it will be possible for this substation, together with the co-operative work undertaken outside, to develop a large fruit industry in Southern Utah and I therefore recommend that \$6,000.00 be requested for the support of this work during the coming biennium.

Owing to the fact that the water supply necessary for ex-

perimental work was not furnished in connection with the Central Utah Experiment Farm, the appropriation granted by the last Legislature did not become available and the farm was temporarily turned over to the Utah County Commissioners pending the action of the present Legislature. In the maintenance of the farm from January 1st up to the time of its transfer to the Utah County Commissioners, a deficit of \$540.28 was incurred. This deficit would have been largely offset by money received from the sale of farm products were it not for the fact that this sale money was wrongfully turned over to the Utah County Commissioners by the former foreman of this farm.

If no further appropriations are to be made for the support of this farm, power should be given to the State Land Board to deed the land back to the county commissioners of Utah County, from whom it was originally received. In making this transfer, provision should be made for the return of the money that was turned over to them by the foreman and the small deficit that will then be remaining in this fund should be provided for by legislative grant.

EXPERIMENTS CONDUCTED UNDER FEDERAL FUNDS.

The poultry department, which is being maintained under the Adams fund, is carrying on comprehensive investigations into the possibility of increasing the laying capacity of fowls and has succeeded in developing laying strains that show considerable increase over the foundation stock from which they originated. Inquiries are also being made into the factors affecting artificial incubation. As the result of these latter studies, a new type of incubator has been designed, which bids fair to obviate many of the defects hitherto encountered and at the same time to materially reduce the expense to the poultryman. A number of other important investigations are being carried on in connection with those mentioned, which will be reported in bulletins now in preparation. The poultry work of the Utah Experiment Station has long been favorably known throughout the United States and the work is now being carried on on a larger scale and with more complete attention to every factor than ever before and the results are becoming even more valuable with each succeeding year.

Sugar beet breeding is being continued and the results obtained during the past two years only more thoroughly confirm previous statements that there seems to be the possibility of developing another industry in the production of sugar beet seed in this State. The work of selecting for high sugar content has been carried on and by improvement of methods, it has been found possible to preserve the mother beets from year to year and thus to largely increase the amount of seed produced. It is hoped that within a year or two now sufficient advances will have been made in the selection of high sugar varieties to enable us to begin the propagation of seed on a commercial basis.

Work in alfalfa breeding is being continued and a number of selections have been made from the different varieties under test and are now being propagated vegetatively, after which they will be used for seed production and further tests of the new strains will be made.

Very little work along the line of horticultural investigation has been carried on during the two years just closing. The College and Station have been fortunate in recently securing as the head of this department a man who has already had considerable experience in investigation work and the plans are under way to inaugurate considerable work in this line for the coming year.

During the past two years, the livestock department of the College and Station have been largely reorganized and pure-bred stock has been substituted wherever possible for the grade animals previously employed in experimental work. Owing to this reorganization, but a small amount of work has been possible during this time. Some work in sheep feeding and the feeding of dairy cows has been carried on and the breeding work looking to the improvement of grade animals by the use of pure-bred sires has been continued and has yielded good results. The testing of the possibility of using pure-bred mares in farm work is being continued. Another pair of imported Percheron mares has been secured and will be used to carry on the ordinary farming operations and continue this experiment. The first two colts from the first team purchased were sold for a sum equaling the original cost of the team.

Investigation of the influence of spraying compounds on the life of our fruit trees has been in progress for the past two years. As the result of this investigation, it has already been demonstrated that the arsenical poisons are not the cause of a large part of the injury that has been attributed to them by certain investigators. The investigation is being continued in the hope of ascertaining the exact factors that are causing the loss of our fruit trees, as well as to determine what methods should be employed to prevent this loss.

Arsenical
Poisoning
Investigations.

An investigation of the alfalfa weevil has occupied a large part of the attention of the entomological department during the past two years. This pest is rapidly spreading throughout the alfalfa growing sections of the State and is causing an immense loss wherever it has become firmly established. The experiments of this year show that by certain cultural methods it is possible to reduce the loss occasioned by this insect to a considerable amount and considerable time has been spent in attempts to perfect machinery that would reduce the numbers of the insect itself. A full report of this work up to July 1st is in press and will soon be distributed.

The Alfalfa
Weevil.

This is one of the most alarming pests that has succeeded in gaining entrance to the United States in recent years and by its rapid spread it is now threatening destruction, or at least a great loss, to the entire alfalfa-producing section of America. It is a problem too great to be undertaken by a single state. The attention of the National government has already been called to its ravages with the result that it has commenced an investigation of the problem in co-operation with the Utah Station. It seems desirable that a special State appropriation be made to undertake further experiments and to disseminate information with reference to the control of this pest, and there is little doubt but that the National government will be willing to duplicate any amount that may be appropriated by the Utah Legislature for co-operative work upon this pest.

Investigations upon the work of the sugar beet leaf-hopper and the distribution of the curley leaf or blight throughout the western country have been continued. The present distribution of this pest, together with the areas in which it is a prominent source of danger and those areas in which it is only sporadic in its

Sugar Beet
Leaf-Hopper

appearance, has been made. As no further damage has been experienced in this State since our previous report, no further work has been undertaken upon the remedial measures.

The study of the production and movement of nitrogen as influenced by irrigation has been continued and the work has been considerably enlarged by the addition of a series of rotations to the original investigation and through the co-operation of the United States Department of Agriculture in the bacteriological investigations. This is an important field of investigation, and, owing to the complete equipment for the handling of irrigation water possessed by the Utah Experiment Station, it can be carried on far better at this station than any other western state.

In co-operation with the State Conservation Commission, the chemical department has undertaken to prepare a preliminary soil map for the State of Utah and to follow this up by a detailed survey of the soils of the different portions of the State. This is a work which is being undertaken by many of our sister states and the benefits that have accrued to the farmers in the various sections where these surveys have been made have been so striking that they are eager to grant greater appropriations for the continuation and amplification of this work. In most cases, this work is not undertaken until, by improper methods of handling, the soils have already been depleted of much of their original fertility. It would seem that this was an opportune time for the State of Utah to make a small appropriation to inaugurate this work and thus prevent the waste which has so undermined the fertility of the soils of the eastern states.

The work of the Experiment Station in investigation is necessary in order to get the information on which to base rational agricultural practices. It is just as necessary, however, that the results of these investigations be published and disseminated to the people of the State and that the results of the investigations of other workers be made available for the use of the farmers of Utah. I therefore recommend the appropriation of \$4,000.00 for the printing of bulletins and manuals of information on some of our leading industries during the coming biennium.

For the work of arid farming as provided for

Summary of Requests.	by Section 2093x13-19 of the Compiled Laws of Utah.....	\$10,000.00
	For the continuation of the work in irrigation and drainage during the calendar years 1911 and 1912, as provided for by Section 2093x8-12, Compiled Laws of Utah.	10,000.00
	For the continuation of the work of the Southern Utah Experiment Farm during the calendar years 1911 and 1912, as provided for by Section 2093x1-7, Compiled Laws of Utah, and for co-operative fruit investigations in Southern Utah...	6,000.00
	For the continuation of the soil survey of the State of Utah.....	4,000.00
	For the control of the alfalfa leaf weevil.....	4,000.00
	For preparing and printing bulletins and practical manuals	4,000.00
Total		\$38,000.00

One-half of the above appropriations to be available each year.

Since the preparation of the last report, six bulletins have been published dealing with various phases of the Station work.

A number of bulletins are in preparation and will be published during the next few months.

In addition, the Station staff have contributed a large number of articles to agricultural papers and has prepared addresses for a number of scientific meetings. The correspondence of the Experiment Station is gradually increasing in volume and the calls upon the staff for assistance in farmers' institute and extension work are increasing. The following is a list of the publications of the Experiment Station since the last report:

Bulletin 105, Irrigation Investigations, Factors Influencing Evaporation and Transpiration.

Bulletin 106, A Study of the Production and Movement of Nitric Nitrogen in an Irrigated Soil.

Bulletin 107, Improvement of Utah Horses.

Bulletin 108, The Effect of Formalin on the Vitality of Seed Grain.

Bulletin 109, The Nitrogen and Humus Problem in Dry-Land Farming.

Bulletin 110, The Alfalfa Leaf-Weevil.

The most important additions to the Station's equipment during this period have been the purchase of a pair of very heavy Percheron mares, imported from France, and the College purchases of pure-bred Jerseys and Holsteins. Besides these, improvements have been made in other lines of livestock; a new incubator cellar has been built; a considerable amount of additional apparatus and equipment has been installed in the chemical laboratory; and some new machinery has been purchased.

The Station staff has been increased in numbers and efficiency. In connection with the College, as has been suggested in the report of the department of the School of Agriculture, it has been possible to retain the services of all the heads of departments in spite of the flattering offers from outside sources. As a result, the work of the Station has gone on without interruption and the spirit of permanency and industry has increased. In this connection, it is again urged that provision be made for the further increase in salaries of desirable men as occasion requires so that the present satisfactory condition may be continued.

In conclusion, I wish to express my deep appreciation of the assistance that you have rendered in bringing about the above results. Your continued personal interest in the work of the Experiment Station and the time that you have devoted to the work of preparing results of previous experiments, have contributed largely to this success.

Respectfully submitted,

E. D. BALL,

Director, Experiment Station.

December 1, 1910.

DEPARTMENT OF AGRONOMY.

To the President of the College,

Sir:—During the year 1909-1910, nine courses were offered in agronomy. This year, 1910-1911, elementary agriculture has been eliminated and the number of agronomy courses offered increased to eighteen.

Agronomy I. *Elementary Soils*; includes a study of the origin, formation, distribution, character, function and classifi-

cation of soils, required of all first year students in Agriculture. Four hours either term.

Agronomy II. *Soil Physics*; required of all junior students in Agronomy. Three hours first term.

Agronomy III. *Cereals*; includes lectures, recitations and laboratory work on the history, production, cultivation and general management of cereal crops. Required of all sophomores in Agriculture. Three hours second term.

Agronomy IV. *Dry Farming*; instruction is given in the methods best adapted to growing profitable crops on arid land. Required of all seniors in Agronomy. Three hours second term.

Agronomy V. *Manures*; this is an elective course dealing with the economic use of animal and artificial manures. Three hours one term.

Agronomy VI. *Farm Management*; an elective course, including a discussion of the various systems of farming and the economic use of labor and machinery. Three hours one term.

Agronomy VII. *Investigation and Experimentation*; a study of the work of the U. S. Department of Agriculture and of the Rothamsted Experiments. An original experiment is outlined, performed and written up by the student. Required of all senior students in Agronomy. Two hours throughout the year.

Agronomy VIII. *Seeds*; an elective course on judging of wheat, oats, barley, corn, and potatoes, shrinkage, germination, etc. Three hours one term.

Agronomy IX. *Utah Soils*; an elective course covering a detailed study of the soils of Utah. Three hours one term.

Agronomy X. *Advanced Soils*; an elective course which discusses types, series and provinces of soils, including the surveying and mapping of a selected area. Three hours throughout the year.

Agronomy XI. *Soil Management*; an elective course on the principles governing the management of different types of soils, rotations, etc. Three hours one term.

Agronomy XII. *Forage Crops*; an elective course on the history, production, cultivation, and general management of grasses and legumes with special emphasis on alfalfa. Three hours one term.

Agronomy XIII. *Tuber and Root Crops*; an elective

course on the history, production, cultivation and management of sugar beets and potatoes. Three hours one term.

Agronomy XIV. *Agronomical Bacteriology*; an elective course in which a study is made of the bacteria which affect soil fertility. Two hours one term.

Agronomy XV. *History of Agriculture*; an elective course of lectures covering the practical problems in breeding farm crops. Three hours first term.

Agronomy XVI. *Practical Plant Breeding*; an elective course covering the practical problems in breeding farm crops. Three hours first term.

Agronomy XVII. *Weeds*; an elective course in which a study is made of the noxious weeds of the State, together with best methods of eradication. Three hours one term.

Agronomy XVIII. *Fungi and other Farm Crop Diseases*; an elective course covering a study of rusts, smuts, scab, rot, etc., which affect our farm crops. Two hours one term.

Of the above electives, agronomy 5, 8, 10, 12, 13, and 17, have been called for, and have been and are now being given during the first term by the professor of agronomy as are also the required courses, agronomy 1, 2, and 7. Mr. Erastus Peterson will teach agronomy 1 in the short course in agriculture which begins November 8. During the second term the following electives and regular courses will be given: Agronomy 1, 3, 4, 6, 7, 10 and 11. This makes a total of 27 hours per week for the first term and 21 hours for the second term.

The number of students enrolled in the various courses follows:

YEAR	Elem. Agr.	Agron. 1	Agron. 2	Agron. 3	Agron. 4	Agron. 5	Agron. 6	Agron. 7	Agron. 8	Sugar Beet Growing	TOTAL
1908											
1909	76	6	3	46	11	1	0	5	1	12	161
1909											
1910	70	24	17	40	15	1	2	9	4	Not Offered	182
1910											
1911	Not Offer- ed	42	7	3	6	2	1	6	0	Not Offered	
YEAR	Agron. 9	Agron. 10	Agron. 11	Agron. 12	Agron. 13	Agron. 14	Agron. 15	Agron. 16	Agron. 17	Agron. 18	
1910											
1911	0	4	2	4	4	0	0	0	1	First Term Oct. 13	82

Agronomy 1, agronomy 3, agronomy 4, come second term and cards have not yet been received for these. Agronomy 6 and 11 also are called for the second term.

The incidental work done by the department has consisted in giving farmers' institute lectures, attending the State Fair exhibits, visiting the dry farms of the State, lecturing before audiences in various parts of the State from time to time upon educational subjects, and in conducting three days of the annual farmers' Roundup.

THE NEEDS OF THE DEPARTMENT.

I. Teaching Force

During the next biennium, if the courses offered continue to be called for, an additional teacher will be added. This will relieve the head of the department of teaching the lower classes so that he can devote most of his time to the higher classes. The assistant agronomist at present being also farm foreman, can devote but little of his time to teaching. In fact, the short course beginning November 8 and ending March 17 is the only one he can handle. The additional assistant could also conduct laboratory work and during the summer months travel over the State and collect samples of soil, grains, and grasses from the various counties of the State. This would give us much needed material for museum and class-room purposes.

II. Equipment.

(a) A greenhouse is also needed by this department and could be built on the plan as outlined in my last report. This would allow us to do a great deal of laboratory work which we cannot now give for lack of facilities.

(b) We are also in need of a house for storing our machinery; the supply now on hand far exceeds our room. The machinery at present is jumbled up in a room in the barn so that students and visitors cannot see it to any advantage.

(c) A number of bins for storing soil are needed in the soil-storing room. At present we do not have enough bins to store a large enough supply to last us through the school year.

(d) In order to accommodate the number of students taking agronomy work, more laboratory desks and apparatus will be needed. This will require about \$300.00.

(e) A good plane table and other apparatus necessary for

making a first-class soil survey is badly needed, so that in connection with our work we can go out into the field and do the practical work.

The supplies necessary for keeping the laboratories in first-class condition will require about \$75.00 per year.

During the present year, through the efforts of this department, the following pieces of farm machinery have been received for demonstration purposes:

1 Kimball Weeder, from Johnston & Weber, The Dalles, Oregon.

1 Adjustable Wagon Box, from American Wagon Co., Chicago, Ill.

1 Alfalfa Seed Buncher, from American Buncher Mfg. Co., Indianapolis, Indiana.

1 Acme Harrow, 1 Spring-tooth Harrow and 1 Hay Tedder, from International Harvester Co., Chicago, Ill., through Consolidated Wagon & Machine Co.

1 Davenport Wagon, from Davenport Wagon Co., Davenport, Iowa, through Consolidated Wagon & Machine Co.

1 Set Self-lifting Guards, from Champion Grain Guards Co., Chicago, Ill.

1 3-H. P. Gasoline Engine, from Fairbanks, Morse & Co., Salt Lake City, Utah.

1 Set of Wheels, from Havana Metal Wheel Co., Havana, Illinois.

1 Smut Machine, from J. L. Owens Co., Minneapolis, Minn.

1 Potato Digger, from Hoover Mfg. Co., Avery, Ohio.

1 Beet Blocker, from Mach Cultivator Co., Traverse City, Michigan.

The above machines represent a money value of \$650.00.

This department is also having a Peterson Weeder made from an improved design, so that, when completed, I am of the opinion that it will be a valuable addition to our dry-farming implements. As a recommendation, I wish to call attention to the fact that horticulture 3, plant breeding, which is now required in the agronomy course, is most suited to students specializing in horticulture. In my opinion, agronomy students will get more in their line of work by taking agronomy XVI, practical plant breeding, and I would recommend that this change be made..

A summary of the needs of the department follows:

One additional teacher for two years.....	\$2,000.00
Machine house	1,000.00
Greenhouse	600.00
Laboratory Desks	300.00
Transit, etc., for Soil Survey.....	300.00
Supplies	150.00
Soil Bins	75.00
<hr/>	
Total	\$4,425.00

The department is growing and is keeping pace with the growth of the Institution. Of the sixteen agricultural students who graduated in June, 1910, eleven were graduated in agronomy. These students are all in actual work and are a credit to the department and to the Institution.

J. C. HOGENSON,

Professor of Agronomy.

October 13, 1910.

DEPARTMENT OF ANIMAL INDUSTRY:

To the President of the College,

Sir:—There are ninety students enrolled in animal husbandry for the first term.

Animal Husbandry I. (Livestock Judging) 60 students

Animal Husbandry II. (Types and Breeds of
Livestock) 11 students

Animal Husbandry III. (Nutrition) 7 students

Animal Husbandry IV. (Breeding) 8 students

Animal Husbandry VI. (Advanced Judging) . . . 4 students

During second term, animal husbandry I, II; IV, and V will be given, making next term's enrollment about as large as this.

In dairying, courses IV and V are being given. Two students, by Bingham. Next term, Dairying I and III will be given,—I by Bingham and III by Caine and Bingham.

The staff of this department does a good deal of farmers' institute work, and also judging at fairs throughout the State. The work of the State Board of Horse Commissioners also

takes sometime, but the effort is well spent as this board is having an influence for good and is doing much to help out the horse interests.

Some assistance will be needed in the teaching force as the department is growing rapidly. A man should be secured to take up work in nutrition, etc. Besides the man doing actual dairy work, someone trained in teaching dairy subjects should be in the department.

EQUIPMENT NEEDED.

Livestock.

Cattle.

2 Hereford cows	\$ 600.00
2 Shorthorn cows	600.00
2 Jersey cows	500.00
1 Jersey bull	500.00
1 Holstein bull	500.00

Sheep.

3 Shropshire ewes	120.00
1 Shropshire ram	80.00
1 Hampshire ram	80.00
1 Cotswold ram	80.00
1 Lincoln ram	80.00

Hogs.

2 Poland China sows	75.00
1 Poland China boar	50.00
2 Duroc Jersey sows	75.00
1 Duroc Jersey boar	50.00
1 Tamworth boar	50.00
1 Berkshire boar	50.00
Shed for cattle yard	500.00
Remodeling horse barn	500.00
Shed and yards for steer feeding	1,200.00
Paddocks for horses	100.00
New floor in hog barn	125.00
Fences around pastures (318 rods)	600.00

*Supplies.**Barns.*

Registering livestock	100.00
Brooms, rope, nails, etc.	100.00
Extra labor	200.00

Office.

Stationery, stamps	25.00
Score cards, etc., for students.....	25.00

Dairy Section.

Churn 75 lbs. capacity	100.00
Ice Plant for school.....	1,800.00
Miscellaneous supplies	100.00

With the increase in herds and flocks, the department will need more grazing ground and so would like to have pasture started on north side of present farm road and above the gardens. This would give us some excellent pasture and would allow of some expansion in numbers of animals kept.

A new fence is needed around the whole farm and especially up the north side where the pastures are.

With these improvements and additions, the department can get along in good shape for the next two years.

Very respectfully,

JOHN T. CAINE, III.,

Animal Husbandman.

October 15, 1910.

DEPARTMENT OF ART.

To the President of the College,

Sir:—The following is the biennial report of the art department arranged to cover the points mentioned in your request of October 5. I submit the following:

(1) Class work. (a) The following courses have been given during the past two years: Art 1, 2, and 3 which are planned to meet the needs of students in agriculture and general science; home economics, and mechanic arts respectively during the first high school year; Art 4 which is planned for second year home economics students; Art 5 (studio work) which is arranged to give special work in any line of art or art craft; and home economics 8 (household decoration and art) for sophomore girls.

(b) Teachers: Calvin Fletcher, Assistant Professor; J. S. Powell, Instructor.

(c) Number of students enrolled at present.

Art 1	46
Art 2	62
Art 3	52
Art 4	14
Art 5	8
Domestic Science 8	8
Total	190

(2) Incidental work. The department staff has done considerable poster work and scenic work for various departments. It has also given extensive help to Student Life and to the Buzzer.

(3) Needs for the coming biennium.

(a) The present teaching force will be adequate for the coming two years. However, if proper adjustments are made as suggested in this report we will soon need the help of a specialist in the art crafts to advance the work in pottery and ceramics, in jewelry, and in art metal. We also suggest that Mr. Hughes' work in carving be listed under our department.

(b) Our greatest need at present is new quarters for our work. We are handicapped in much of the work we would like to do as it would be annoying to other classes. We need a room fitted up for work in art metal, jewelry, and general applied design. We are anxious to have the design work closely related to the practical and the articles made complete as far as may be. The work can thus be put on a paying basis as we believe such work would find a ready sale. We need a room specially fitted and equipped for clay work and pottery. It should have with other things a potter's wheel, a studio kiln adapted to high and low temperature firing, and facilities for casting in plaster and cement. The demand is increasing daily for decorative details in plaster and cement. Our students should be given opportunities along these lines.

With these things in mind we feel that the fourth floor should be fitted up or the present gymnasium or some other isolated place where we can have a north light or skylight, for the department. We have gone over the situation carefully and feel we should have at least two general class rooms about the size of our present rooms; one large general studio and exhibition

room; an art crafts room equipped for copper and brass work, leather work, art jewelry, etc.; a clay modeling and pottery room and at least two private studios. These rooms should be fitted with cases for materials and lockers for the students. The present lockers and cases may be used but we need about 150 more. I cannot give you an accurate estimate of the cost as that would depend on where the department was put.

(c) Supplies. We recommend the handling of all student materials by the department instead of by the book store. The applied work herein suggested will call for such materials as copper, brass, leather, cloth, chemicals, etc. It would be inconvenient for the book store to handle such stuff as well as being less economical to the student. A studio or laboratory fee could be charged which would be a great saving to the student as well as to the department. All work could then be retained and sold to the student at the cost of material or sold to the public to build up and better equip the department. We believe by so doing the work would almost be self-supporting as well as doubling its present efficiency. We will need student or other aid if this is done, in the handling of materials as well as a supply room. We think with a fee of \$1.00 for art 1 and 3; \$2.00 for art 2 and 4, all material except pencils and common drawing paper could be furnished by the department. A fee of one dollar should be charged studio and advanced special students for incidentals and then let them buy all special materials as they need them. With this in view we will need about \$400.00 for the first year and about \$300.00 for the second year.

(4) General Recommendations.

(a) Work of the department. We recommend that the courses in fine arts and art crafts be extended and that it be made possible to use these subjects as majors or minors leading to the B. S. degree in general science. We also think that a course in architecture and one in general house and sign painting should be placed either in this or in the department of mechanic arts.

(b) We suggest that a course in lettering and show card writing be made an elective course in the School of Commerce. We also suggest an elective course in advanced constructional design for students of the School of Mechanic Arts. We feel in rearranging the course for mechanic arts boys the work now given should be divided and extended through two years in-

stead of one. We think the other work should remain about as it is.

(c) We feel the courses in the Institution are too tight. Our work is handicapped because talented students desiring to continue with us cannot do so without giving up their regular courses. We think schedules should be so arranged that students may be given the choice of at least three hours of elective work each year. I believe this would remedy the trouble we now have in getting contributions to student papers, etc. It would mean better and more advanced work in all departments similar to our own.

We suggest that an annual fair be held in the spring or in the first part of December at which the work of the various departments be exhibited and all salable work sold first by selection and what is left by auction. This would not only prove a financial success but would be a means of making our work better known and a greater educational factor in the State.

We suggest that the Institution purchase a reflecting lantern to use instead of a stereopticon. It will cost from \$80.00 to \$125.00. No slides are needed for the lantern as any sort of picture, in or out of a book may be used without injury. Mounted specimens of all kinds may also be reflected. This would be valuable to our department as well as to a number of the other departments of the school.

Very respectfully submitted,

CALVIN FLETCHER,

Assistant Professor of Art.

October 17, 1910.

DEPARTMENT OF BACTERIOLOGY.

To the President of the College,

Sir:—There are at present 38 students enrolled in Bacteriology:

Bacteriology 1, General Bacteriology..... 33 students

Bacteriology 1, Course for County Teachers,

(Saturdays) 5 students

These courses are repeated the second term. The above classes are conducted by myself in connection with my work in veterinary science, but we will have to have assistance in the laboratory work.

This department has suitable quarters but more equipment is absolutely necessary. We are only offering one course in bacteriology. In an institution of this kind, we should offer at least another course that is elective. Inasmuch as the general course is required of nearly all college students and more work should be offered, this department should have a bacteriologist to look after it and do nothing else.

The following is an estimate of the requirements of this department for the next biennium:

5 Tripple-nosepiece, high power microscopes, at	
\$60.00	\$300.00
1 large steam sterilizer	40.00
1 autoclave	80.00
Glassware	100.00
Supplies for laboratory	300.00
	<hr/>
Total	\$820.00

Respectfully submitted,

H. J. FREDERICK,

Bacteriologist.

October 17, 1910.

DEPARTMENT OF CHEMISTRY.

To the President of the College,

Sir:—I submit herewith a report of the department of chemistry for the present biennium, together with an estimate of the needs of the biennium beginning July 1, 1910.

During the school year 1909-10, there were 243 students registered in the department. During the present year, to date, there are 151 students registered. There are four second term subjects to be given this year in which students are not yet registered but which were included in last year's total. The distribution of the various students in the several classes amongst the instructors is given in tabular form below.

Names of classes and instructors and number of students in classes:

	Number of Students.	
	1909-10	1910-11
Prof. Stewart.		
Chemistry 2	14	15
Section 1	27	..
Section 2	22	..
Chemistry 4 .....	..	x
Chemistry 5	37	x
Chemistry 5b .....	..	2
Chemistry 6	7	7
Chemistry 9 .....	..	x
Chemistry 11 .....	..	5
Chemistry 13 .....	..	x
Chemistry 14 .....	..	1
xChemistry 4, 5, 9 and 13 are second term subjects. Students all not yet registered.		

Names of classes and instructors and number of students in classes :

	Number of Students.	
	1909-10	1910-11
Prof. Porter.		
Chemistry 1—		
Section 1	34	31
Section 2	33	36
Section 3	20	24
Chemistry 3 .....	..	25
Chemistry 8	5	..
Chemistry 10	5	5
Chemistry 11	5	..
Prof. Greaves.		
Chemistry 7	7	..
Chemistry 4	6	..

The entire departmental staff, realizing the importance of chemical work in an agricultural college, have endeavored to secure the best training possible in their respective lines. At this beginning of the biennium the writer returned from a year's graduate study at the University of Illinois, while Prof. Porter returned from two years' graduate study at Harvard. During the present year, Prof. Greaves and Mr. Walters have been granted a year's leave of absence for graduate study at the University of California. These two members of the staff both hold valuable fellowships at California.

Last year the registration was 243 students; this year to date there are 151 students registered, and, when the second semester students are all registered, we shall have fully as many students if not more in the department this year than we had last. Every student in the department should have laboratory work in connection with his class room work; yet, with the registration indicated, we have only actual laboratory space for 64 students. As a result, some of the laboratory desks are being used by three different students, while many of the students who should receive laboratory instruction are being neglected.

It is pretty well generally recognized that a course in soil fertility should receive some consideration in an agricultural college. Such a course is being given by the chemical department. Last year we had 37 students registered in this course. Every one of these students should have received laboratory instruction; yet, there was not a single desk available for this work. The Agricultural College of Utah is the only agricultural college in the United States which attempts to teach this subject without laboratory instruction.

The most crying need of the department at present is for more laboratory space. In his report to the president in 1902, the professor of chemistry says: "The number of students pursuing work in chemistry is now considerably in excess of the desk room." Since that time, provision has been made for an increase of eighteen students, while the number of students in the several courses has increased from 400 per cent, in some courses to 1,200 per cent in others. This congested condition of the department ought to be remedied at once and I should like to urge upon you the necessity of some provision being made for the proper teaching of the subject.

This condition can be relieved only by the erection of a new building,—the present quarters of the laboratory are entirely inadequate and there are no rooms in the main building large enough or suitable for conversion into chemical laboratories. The time seems opportune for the erection of one wing of a new agricultural building, which would be devoted to the work in chemistry. This seems to be the only means by which relief may be had from the oppressive congested condition of the chemical department. I should like to recommend this to your careful consideration.

The research division of the department is being devel-

oped rapidly. The head of the department is urging upon every member of the department staff the necessity of doing research work as well as instructional work. To be a good teacher, one must also be an investigator. With this idea in mind, problems are being assigned to each member of the staff for solution. Prof. Greaves has made considerable progress in his study of "Some Factors Influencing the Determination of Gliadin in Wheat Flour." This work was about two-thirds completed here and has been accepted at the University of California as a thesis for the degree Doctor of Philosophy. Mr. Hirst is making a study of "The Nature of Organic Phosphorous Compounds in Arid Soils." Mr. Macfarlane is making "A Study of the Effect of Water-soluble Calcium Sulphate on Crop Production." In addition, the two main lines of research work of the department—"The Study of the Effect of Irrigation Waters upon the Production and Movement of Nitric Nitrogen," and "The Chemical and Milling Qualities of Utah Wheats,"—are being pushed rapidly.

During the biennium, five station bulletins have been published by members of this department staff and three special articles in chemical journals. In addition a number of articles have been published in the different papers of the State. The members of the department staff have been called upon for institute work and addresses at meetings of scientific societies.

Next year, owing to the introduction of the third year high school course, the class in freshman chemistry will be very small, not over one section. Our present instructional force will therefore probably be sufficient for next year, but for the year following provision should be made for one instructor in organic, analytical and physiological chemistry. It will be necessary for one man to devote all of his time to general chemistry. In addition, the following will be needed:

Storeroom Keeper at \$150.00 per year	\$ 300.00
<i>Supplies.</i>	
Restocking of chemicals, \$600.00 per year . .	1,200.00
Purchase of one-half gasoline used, \$250.00	
per year	500.00

Equipment.

Hydrogen Sulphide Generator.....	25.00
2 Pairs of Balances.....	250.00
Platinum crucibles	90.00
Museum cases	250.00

Each year we employ some chemical student to take charge of the storeroom. With the increase in the number of students, we find that one student now can hardly handle the work. I think that it would help the department considerably if the Board of Trustees would establish two fellowships of \$75.00 each in chemistry, with the money spent for this work. These fellowships could then be assigned to worthy students and the department could require a certain amount of time from them in caring for the storeroom. I should like to recommend this to your consideration.

In order to avoid unnecessary duplication, I should like to recommend that all the work in soil fertility, both the instruction in the College and research, be assigned to the department of chemistry.

The most serious handicap we have in our research work is the lack of library facilities. It is impossible to carry on effective research work without a knowledge of what has already been done in the particular field in which the research is being made. To do this, we should have complete sets of about three journals published in the German language, two published in French, and four or five published in English. Some provision should be made by the College for the purchase of the back numbers of these several journals.

The head of the department has received hearty support from all members of the department staff. He wishes to thank you for the hearty support and inspiration which he has received.

Respectfully submitted,

ROBERT STEWART,
Professor of Chemistry.

October 17, 1910.

DEPARTMENT OF ENGLISH.

To the President of the College,

Sir:—I take pleasure in reporting the present condition of the English department, more particularly as it shows a healthy normal development when compared with the report of 1908.

(1) The total number of students enrolled in the department is, at the present writing, 554. A slight amount of duplicate registration reduces the number to about 545, but every day so far several new students have registered for English, and when, on November 8, the half-year courses begin, we shall have to organize new sections in English 4. The following tables show the names of courses given this year, the number of students in each course, the teachers of each course, and the number of students and of recitation periods for each instructor.

Names of courses; instructors and number of students in each course:

English 1,	Preparatory English	5
	Miss Charlotte Stewart.	
English 4,	First Year High School English	192
	Miss Charlotte Kyle, section 6.	
	Mrs. Katharine Clark, sections 1, 2, 5.	
	Miss Amelia Manning, section 3, 4, 7.	
English 5,	Second Year High School English	127
	Professor N. A. Pedersen, section 1.	
	Miss Sara Huntsman, sections 2, 5.	
	Miss Charlotte Kyle, sections 3, 4.	
English 6,	History of English Literature	95
	Professor N. A. Pedersen, sections 1, 2.	
	Miss Sara Huntsman, section 3.	
English 7,	College Rhetoric and Composition	66
	Professor C. Larsen, section 1.	
	Professor N. A. Pedersen, section 2.	
English 11a,	The Modern Short-Story	8
	Professor C. Larsen.	
English 12,	American Literature	12
	Professor C. Larsen.	
English 20,	Argumentation and Debating	13
	Professor C. Larsen.	
English 21,	The Bible as Literature	16
	Professor C. Larsen.	

English 22,	First Year Elocution.....	5
	Miss Charlotte Stewart.	
English 23,	Second Year Elocution.....	5
	Miss Charlotte Stewart.	
English 24,	Public Speaking	5
	Miss Sara Huntsman.	
English 25,	Journalism	5
	Professors Arnold and Larsen.	
Total number of students in all courses.....		554

Number of recitation periods per week and number of students taught by each instructor:

C. Larsen	15 periods	98 students
N. A. Pedersen	14 periods	123 students
Sara Huntsman	16 periods	69 students
Charlotte Kyle	15 periods	72 students
Charlotte Stewart	10 periods	15 students
Mrs. Clark	15 periods	82 students
Amelia Manning	15 periods	95 students
Total		100 periods 554 students

Average for each instructor ... 14 2-7 periods 79 1-7 students

In considering these averages, however, it must be remembered that Miss Stewart's time is largely taken up by her work as head of the department of physical education for women. At present she has but 10 periods and 15 students in the English department, but a large part of her time between now and the Christmas vacation will be devoted to coaching the members of the cast in Pinero's "Amazons," the high school play.

(2) The incidental work done by the English department consists of general supervision of student publications, e. g., "Student Life" and "The Buzzer;" of the preparing and editing of all College publications; of selecting the plays and coaching the students for the high school and college theatricals; of participating in the training and coaching of the teams for the various inter-collegiate debates; of general supervision of the advertising and publicity work of the entire Institution; and of frequent aid in the field of general extension work, in particular in helping to conduct county teachers' institutes throughout the State.

(3) The teaching force of the English department will have to be increased by one, as soon as the new schedule of high school work goes into effect. The much-needed and welcome addition of third year high-school English, with the regular normal increase in attendance will certainly necessitate the services of an additional instructor to give all his time to the department. Furthermore, if we are to progress in our inter-collegiate debating in a degree commensurate with the growth of the College, we should have a specially trained instructor for this branch of the work, one who throughout the debating season can give the major portion of his time to coaching the debaters.

By way of equipment the department needs several wall maps, in particular three or four large maps of Great Britain, to aid in the teaching of literary history; also a collection of framed or mounted prints and photographs illustrating English and American literature. A very good beginning in this field was made by the recent purchase of a small collection of Copley prints. Beyond these two classes of graphic teaching material there is but a single need, which is, however, a glaring deficiency: an increased number of books in the College library. The English department has no laboratory other than the library; it requires no laboratory furnishings, no laboratory supplies except books. For years the annual appropriation for the field of English and general literature has been very inadequate, so that at present our collections in every field of literature are very imperfect, not to say fragmentary. The work in every college course in English is sadly hampered by this crying need, and will continue to be hampered until this department of our library is brought somewhere near the average standard for American colleges. For one of the courses, viz., English 6, the History of English Literature, there ought to be found in the library a certain number of duplicate copies, since students cannot be required to buy all the books read in this course and one or two copies for 95 students is a positively intolerable condition.

(4) The plan that was inaugurated a year ago of giving the instructors an average of 15 periods and from 75 to 90 students in composition work has proved eminently successful. It has enabled us to do away entirely with theme readers. The instructor reads every composition handed in, consults with the weak

and failing students, and is in constant touch with every one of his charges, a condition quite impossible under the old system.

I recommend most strongly that under the new schedule of high school work, third year English such as is given in the great majority of secondary schools throughout the country be offered by the department; also that all degree graduates be required to take a course in general literature, including all the great world classics. They ought also in order to appreciate English literature to be required to take a course in English history.

As to the work of the College in general I have but few suggestions to offer. The most important is that our students of collegiate grade be granted more elective hours. At present they can elect but a very small proportion of their work. In order to give them this generally demanded freedom and not encroach too much on the specialized work it may be necessary to reduce the periods of laboratory work for a credit hour.

Respectfully submitted,

CHRISTIAN LARSEN,

Professor of English.

October 17, 1910.

DEPARTMENT OF GEOLOGY AND MINERALOGY.

To the President of the College,

Sir:—Complying with your request of recent date, I hand you herewith the following report of the present condition of the department of geology and mineralogy, and its needs during the coming biennium.

(1) The class work in this department is conducted wholly by the department head, and the method of instruction is by lecture, supplemented with reading, reports, laboratory, and field work. In all eight courses of instruction are offered by the department, as follows:

Geology 1—Elementary Physiography.

Geology 2—General Geology.

Geology 3—Economic Geology of the United States.

Geology 4—Mineralogy (Descriptive and Blow Pipe).

Geology 5—Agricultural Geology (origin of soils).

Geology 6—Advanced Physiography.

Geology 7—Petrology.

Geology 8—Field Geology.

A course in fire assaying is also given by special request, during the second half year, if four or more students apply. For the present and past year the courses taught in the department and the number of students enrolled in each are as follows:

Course	No.	Sec.	No. Students 1909-10	No. Students 1910-11
Geol. (Physiography)	1	1	3	None
Geology	2	1	24	48
Geology	3	1	4	4
Geology	4	1	3	None
Fire Assaying		1	4	2

Remarks:—Geology 1 was given to teachers in 1909-10. Geology 2, largest class in history of school.

Fire Assaying: Two students made application this year.

(2) The incidental work done by the department includes rock and ore analysis and some assaying for persons who send samples to the institution. This work, in my opinion, should be continued as it is a means of service to a few, and of advertising the Institution and a branch of its work in a small way. Besides this analytical work, the department last year started the collection of data and material leading to the information necessary for the publication of a geologic map of the State of Utah. In connection with this work of compiling and collecting the material for a geologic map of the state, already important suggestions and aid have been offered by the head of the United States Geological Survey. To carry the work to completion, however, financial aid from the State will be necessary, and it is hoped that such help can be secured at the next Legislative Assembly. Such geologic work might properly be extended into a state geologic survey, a much needed organization in Utah.

(3) Relative to the needs of the department for the coming biennium, the present teaching force will probably be ample to do the work satisfactorily. A little assistance in the laboratory, however, would be helpful.

(b) The equipment of the department, so far as concerns its present needs, is quite complete. Some few repairs and additions are needed. For doing the teaching in geology, mineralogy, and assaying we are fairly well prepared, though our mineral and petrographic collections should be enlarged. Such

additions as are needed, however, can be made at small cost, and would make our collections first-class. As opportunity presents on field trips, new minerals and rock specimens are being added to the collection, whenever new types can be secured.

The greatest need of the department for doing the best work in its courses is felt as a result of its lack of charts, maps and relief models, in the class room. A relief globe and a collection of geologic photographs also, are among the necessities.

(c) For the work in mineralogy and assaying a few repairs and supplies are needed from time to time during the school year. The cost is very small.

A careful estimate of new equipment and supplies needed in the department for the next biennium places the cost of the same at about \$600.00. In this estimate I have considered only the immediate needs of the department as to its equipment and supplies, and a few repair costs needed to install an experimental desk in the class room.

(4) You will note by a glance at the courses being given this year and those of last by the department, that the work in physiography has become practically eliminated due to the action of the school directors about a year ago, making the subject elective instead of required in our high school work. I strongly recommend that this subject be required of all high school students of second or third year standing, and that political geography, as given in the grades, be not allowed as a substitute for this work. Certainly such a subject is fundamental and a knowledge of the simple natural laws and phenomena with which it deals, should be the possession of all high school students before they are of college grade.

Relative to the subject of general geology as now required in the senior year, I suggest that this course could properly be scheduled in the sophomore or junior year, thereby giving such students as desired an opportunity to pursue some of the more advanced courses in geology before the completion of their college work.

(b) The relation of this department to other departments of the college, it seems to me, is clear. Every student with a degree from the Institution should have at least a general knowledge of the geologic history of the earth. To the student of agriculture I consider the work in general geology very essential, and to those specializing in agronomy, I consider the work contemplated in geology very necessary. The students

taking degrees in chemistry should be strongly advised to take the work in mineralogy and assaying after geology 2. Students of economics should find economic geology profitable.

Respectfully submitted,

H. C. PARKER,

Assistant Professor of Geology.

October 17, 1910.

DEPARTMENT OF HISTORY.

To the President of the College,

Sir:—I submit herewith a report of the department of history for the present biennium. I was unable to secure in time sufficient data about the work of the year 1909-10 so that this report is chiefly a statement of the position of the department at the present and its needs for the future.

Four courses in history are offered: History 1, Greek and Roman history, and history 2d; (three sections) American history, both elementary courses; history 3, English history, and history 4, general European history, both advanced courses. The registration in these courses at the close of the year 1909-10 and at the beginning of the present year is as follows:

	1909-10	1910-11
History 1	9	14
History 2 Sec. 1	21	28
History 2 Sec. 2	27	40
History 2 Sec. 3	27	7
History 3	8	8
History 4	10	14
	—	—
Total	102	111

In addition to the above courses, a History Club has been formed among the more advanced students which meets fortnightly for the discussion of topics on historical subjects. The topic considered during the first semester is the exploration of the intermountain region in the sixteenth, seventeenth and eighteenth centuries.

It is likely that an additional instructor will be needed soon. Such an addition to the teaching force will be necessary in case new courses in European and American history are offered next year.

In the matter of equipment, a very pressing need is felt for books. The library is the laboratory of the department and while it is reasonably well supplied with books on certain fields, is quite deficient in others. In particular, we need historical atlases, a number of practically indispensable books on English, French, and German history, and a larger collection of books on the American West. By careful selection and judicious buying, the library can, in course of time, secure an excellent collection on a field that is attracting the attention of American historians and that is of special importance to the people of this State.

Better historical wall maps are needed for the class-room and for the more advanced classes a room situated conveniently near the library and containing a large table would be very desirable.

It seems probable that another year courses in the history of the American West, in recent European history, and in the economic history of Europe (especially agrarian history) could advantageously be offered. A course in the last named subject would be particularly useful to students in the School of Commerce or in connection with the courses in economics. Beyond these, a course for teachers on the teaching of history, particularly American history, would be of considerable service in securing a higher standard and a uniformity of preparation among students entering this Institution.

Courses in history could properly be opened to students in the sophomore and junior years in the college course in home economics and in the sophomore year in the college course in commerce. Courses in English history and in the history of the American West might well be prescribed for students in the School of Commerce, and at least one course in history should, I believe, be required of students in the School of General Science. I would suggest that students of English literature be urged if not required to parallel their work in literature with courses in history.

The department should aim to co-ordinate its work with the departments of economics, political science, English and modern languages.

Respectfully submitted,

HARRISON C. DALE,

Assistant Professor of History.

October 17, 1910.

DEPARTMENT OF HORTICULTURE AND BOTANY.

DIVISION OF HORTICULTURE.

To the President of the College,

Sir:—I wish to call your attention to the increased number of students in the several courses in horticulture. As the registration for the second term is not complete, my statistics are only relative and based on first term work.

Course	No.	Number of Students			Instructor
		1908	1909	1910	
Hort.	2	3	13	42	Batchelor
Hort.	3	8	19	18	Batchelor
Hort.	5	0	0	3	Batchelor
Hort.	7	2	6	8	Batchelor
Total		13	38	71	

You will note the rapid increase during the past three years from the above table and at this date the total number of horticultural students in the first term courses is 78 per cent greater than last year. Figuring on this basis, with a total registration last year of 102, the total this year will reach about 190 students in horticulture (not counting Winter Course students).

The courses offered this year are as follows:

Pomology (Commercial Fruit Growing), Vegetable Gardening, Plant Breeding, Evolution of Plants, Investigation, Landscape Gardening, and Horticultural Literature.

The following courses should most certainly be taken up by this department in the near future:

Nursery Practice, Systematic Pomology, Spraying Horticultural Crops, and a separate course in Bush Fruits.

It also seems desirable to include a course in nut culture in the near future.

The care of the campus, which comes under the direction of this department, has been ably supervised by Mr. Batt, foreman of the grounds, and there is no disposition
 Campus. in this office to change the policy of this division
 of the department. The new horse lawn mower

is necessary. Otherwise, the only purchase of equipment needed will be the natural replacement of such small tools as are worn out from time to time in the process of caring for lawns, walks, drives, shrubberies, trees, etc.

Radical changes must be made in the near future in all horticultural courses, in that there should be laboratory courses outlined for practically all the courses in this department. This will necessitate the purchase of laboratory equipment and make it imperative for the department to have another trained man to help in laboratory work and be responsible for a portion of the class room exercises.

There is an urgent need for a storage house for the purpose of keeping fruit and vegetables for class work. The presence of such a house will be imperative before a course in systematic pomology can be given. Such a building could be erected very cheaply in the form of a cellar, surmounted by a very low building with an earth roof, which would be satisfactory for our small amount of fruit storage.

Additional greenhouse space is needed for this department for growing specimen plants, for conducting classes in propagation and various other horticultural operations. More space is also needed for starting and storing ornamental plants grown on the campus. The plant breeding phase of horticulture should be more highly developed in the near future, in which case it is positively necessary for the student to have greenhouse space to carry on investigation work, as well as free access to a larger variety of greenhouse plants for laboratory study.

There is a decided need for a small permanent orchard of the various fruits for educational purposes. I believe this orchard should be kept separate and distinct from the experimental orchard and be used only by the students and by this department for educational purposes, as the growing of the various fruits, for systematic study, training the students in pruning, thinning, picking, packing and handling fruit in general. In this connection, it will be necessary to buy a small tract of land suitable for the production of apples, as the land owned at the present time by this department is not adapted to this crop. Other plantings of fruit, as peaches, plums, grapes, cherries, etc.,

should be made and maintained on the land now under our jurisdiction.

Needs in detail for biennial appropriation:

Labor.

Campus (two year period)	\$ 3,500.00
Greenhouse (two year period)	1,000.00
Teacher in Horticulture	1,500.00

Buildings.

Greenhouse	7,000.00
Storage House	600.00

Equipment.

Laboratory	2,000.00
Nursery stock and land for small educational orchard	800.00
Campus	200.00
Botany	600.00

Supplies.

Campus	600.00
Horticulture Class Work	300.00
Botany Class Work	200.00
Total	\$18,300.00

The co-operation of this department with the extension department involves a large amount of time and labor during the winter months and again makes it imperative to have a well trained man to leave in charge of the teaching work when it is necessary for the head of the department to be absent in field and extension work.

The needs of the botanical division have been clearly set forth by Professor Smith. However, the details for this division are included in the above table for biennial appropriation.

Respectfully submitted,

LEON D. BATCHELOR,

Horticulturist.

October 17, 1910.

DIVISION OF BOTANY.

To the President of the College,

Sir:—Since the report of two years ago, the work of the botanical division of this department has met with some radical changes, some of the most important being due to the acquisi-

tion of roomy and suitable quarters in the south end of the main building. A better room than No. 182 for a botanical laboratory is not to be found in the college. The old green window-shades have been replaced by white linen shades, thus making the very important matter of light for microscopic work a matter of much easier adjustment. Fifteen microscopes have been added to the equipment of the department, so that the number of such instruments now necessarily borrowed from the zoological-entomological department is much reduced.

The herbarium of local plants has been overhauled and many important additions made to it, the considerable task of much needed rearrangement being now well along and nearing completion. This collection has long been in such a condition of confusion that interested students and members of the Faculty have been unable to make desired use of the specimens. The growing need of a broader knowledge in systematic botany is shown by the requiring of botany 11 of special students in entomology. A well arranged herbarium is indispensable in this work.

Botany 2 (Elementary Morphology and Taxonomy): Sec. 1 now has enrolled 20 students. Sections 2 and 3, to be enrolled for the second term, will probably include fully 70 more; but the actual number is not accessible at this date (65 students took the work last spring).

Botany 3 (Histology) and botany 4 (Physiology): 54 students enrolled to date and fully ten more may be expected; this, in comparison with 44 last year, and 43 the year before. When the present instructor assumed charge of the work, the course in plant histology had been given in two lectures and one two-hour laboratory period. The change to one lecture and two three-hour laboratory periods has yielded much desired results; but with 54 students in the laboratory at one time, even two instructors cannot do justice to the work, and 15 microscopes are far from sufficient. At least 15 more microscopes should be added to the equipment of the department and the class should be divided into sections, with 30 as the maximum number of students in each. First-class work can not be done as long as each two students are forced to work with one instrument.

Botany 5 (Plant Pathology): Fifteen students are taking this course the present term, sixteen having completed it last year; as against three in 1908-09 and none in 1907-08.

Botany 11: Two Students now enrolled as against one last year; but this course will certainly be enrolling several more students in the near future.

It is requested that \$600.00 be appropriated for next year, available next summer, for the purchase of the needed fifteen additional microscopes and other apparatus for botany 4, also for the construction of a wall case to hold the thirty microscopes in addition to the usual allowances for ordinary equipment and supplies.

It is also very evident that the time has now arrived when a graduate assistant must be provided, as the sections must be reduced to include fewer students, the number of sections increased, and classes in at least two subjects be conducted at the same time.

Respectfully submitted,

C. P. SMITH,

Assistant Professor of Botany.

October 17, 1910.

DEPARTMENT OF IRRIGATION AND DRAINAGE.

To the President of the College,

Sir:—There has been no change made in the work offered by this department during the last two years.

We are still laboring under the very great disadvantage of restriction in this field, which was imposed upon the College by the Legislature. It is to be hoped that the time is near when this matter can be properly adjusted, so that the work in this important field can be increased and strengthened.

The courses which were given last year and are being given this year, except irrigation 1, are: irrigation 5, hydraulics, and surveying.

The writer has done considerable work during the last year on the proposed hydro-electric power plant for the College, and also in the matter of State roads as a member of the State Road Commission.

Yours truly,

J. W. JENSEN,

Professor of Irrigation Engineering.

October 17, 1910.

LIBRARY.

To the President of the College,

Sir:—There were 44 students enrolled in library work during the year 1909-10; these were distributed into three sections. There are forty students enrolled at the present time for the year 1910-11, also distributed into three sections.

A text-book for the work has been printed, entitled "List of Reference Books in the Library of the Agricultural College of Utah." The edition will be exhausted at the expiration of this year and a new edition will be desirable.

The following is a summary of library accessions during the period beginning December first, 1908 and ending November 30, 1910.

LIBRARY ACCESSIONS—STATISTICAL.

Books purchased	1,582
Books by gift (including exchanges)	340
Books deposited by the United States Government	766
	<hr/>
Total Books	2,688
 Pamphlets by gift (including exchanges)	1,962
Pamphlets (United States Government)	2,074
	<hr/>
Total Pamphlets	4,032
 Total additions to the library	6,720

PRESENT STRENGTH OF THE LIBRARY.

Books	18,889
Pamphlets (estimated)	19,005
	<hr/>
Total	37,894

The books of the two years are classified as follows :

Cyclopedias, bibliography, etc.	111
Periodicals	113
Philosophy and religion	88
Political and social sciences.	431
Useful arts (incl. agriculture, home economics)	671
Natural sciences	427
Fine arts	66
Literature and language.	326
History, biography, geography.	187
U. S. public documents (unclassified)	267
Total	<hr/> 2,688

The shelf space is entirely filled. There is no place in the library for new books. It does not seem wise to put in more book stacks for two reasons: The floor space is needed for reading tables; the weight on the floor would be too great. If a separate room in the building located as near the library as possible could be shelved and used as a United States public document room, then these numerous but very useful and valuable publications could be placed together in this room. The shelves in the library now occupied by the Congressional set of documents would hold the new accessions for some time. Rooms 202 and 203, which are not used very much in their present state, would be most useful library additions. They could be opened as periodical rooms, library class room, consulting or committee room, all of which needs are very much felt.

The general appearance of the library would be much improved if the walls were done over, tinted to relieve the dead whiteness. It will be necessary to add a new inexpensive periodical rack, another cabinet for catalog cards and some office furniture. May we hope for works of art, the presence of which bear such a great influence on education?

The class of 1910 presented to the College a very beautiful white marble clock. It has been placed on the south wall of the reading room of the library.

As a reading and study room the library is in continual use, every chair being occupied most of the day. A college library is essentially chiefly a reference library, but the books are loaned to any responsible person as well as to the faculty and

students of the College. A careful record is kept of this circulation.

To have on the shelves the standard works and to procure the latest literature, particularly in the lines of study for which the college stands, is the foremost need of the library. The demands of each department in its efforts to do more effectual work in teaching, experiment or research must be supplied. Technical and popular books and magazines are increasing in number and price and are becoming more specialized. This involves a greater amount of money than ever before. At the same time a certain balance must be maintained in the general library collection. Books must be chosen from all departments of literature.

Agricultural literature should be the strongest department. This section of the library has been much improved by the completion and binding of the majority of the bulletins, circulars and reports issued by the various bureaus of the United States Agricultural Department. An effort is being made to complete as nearly as possible these files as well as the publications of the various state experiment stations.

The chemistry department has turned over to the library the majority of its books. All books owned by the College should be library property, accessioned and catalogued. It is hoped soon that a more definite relation may be adjusted between the Experiment Station library and the library of the College.

In order that the library may do its most effectual work in supplementing the work of the departments and in standing as an educational feature in itself, there should be appropriated for each year of the coming biennium the following amounts:

a. Assistance (student)	\$ 250.00
b. Equipment (including books, magazines)	2,500.00
c. Supplies	50.00

Respectfully submitted,

ELIZABETH C. SMITH,

Librarian.

November 30, 1910.

DEPARTMENT OF MATHEMATICS.

To the President of the College,

Sir:—There are five courses in mathematics being given at the present time. The number of students registered in the above courses is 359. The following is a list of the number of students in each course:

Mathematics 1	1 section	10 students
Mathematics 2	6 sections	180 students
Mathematics 3	3 sections	85 students
Mathematics 4	3 sections	75 students
Mathematics 5	1 section	9 students
Total		359 students

At least one more section will be needed in mathematics two before the present year is over.

There are six teachers doing work in the department, only one of whom is devoting his entire time to the work of the department.

During the next biennium the increased number of students required to take mathematics 2 and 3 will require at least one more section in each of these courses, making a total of 85 hours work in the department, requiring the equivalent of four teachers full time.

The writer is of the opinion that in order to secure the best results, every teacher working in the department should devote at least half of his time to the work of the department.

About two hundred dollars should meet the necessities of the department for the next two years.

Yours truly,

J. W. JENSEN,

Active Professor of Mathematics.

October 17, 1910.

DEPARTMENT OF MILITARY SCIENCE AND TACTICS.

To the President of the College,

Sir:—Replying to your letter of October 5, I have the honor to report as follows:

There are enrolled, this date, in the department proper, 181, in the band, 25; a total of 206. The work done is both practical and theoretical. For the practical work the students drill as infantry five days in the week. For theoretical work they are divided into five classes. Those taking theoretical work are excused from practical work on that day. This is equivalent to four days practical work and one day theoretical work per week.

All classes are taught by myself.

A non-commissioned officer, U. S. A. retired, is needed as an additional instructor. An armorer is needed to care for the equipment.

The college should own the target-range and put it in first class condition. The Government furnishes the rifles, ammunition and target supplies. The department is badly in need of a new drill hall, the present one is entirely too small.

I recommend that the Trustees be requested to authorize the remission of all fees to all commissioned officers of the cadet battalion. This would affect about fifteen cadets annually and would be an added incentive to do good work.

Respectfully submitted,

LOCHLIN W. CAFFEY,

1st L. 15 Infantry.

Professor of Military Science
and Tactics.

October 1st, 1910.

DEPARTMENT OF MODERN LANGUAGES.

To the President of the College,

Sir:—The department of modern languages and Latin has felt, during the past two years, the general prosperity of the College in a most gratifying manner. It has received encour-

agement and sympathy from the other departments of the College and has made a remarkable growth. For the first time in the history of the College the beginning classes in German have been so large that they have had to be given in two sections. For the first time, also, there has been a demand for electives in language, five students taking such work in 1909-10 and twenty in 1910-11. To meet the increasing work of the department Mr. George C. Jensen, A. B., (Brigham Young College) has been hired as an instructor on part time. This year's registration in the department is as follows:

Course	Section	Students	Teacher
German I	1	29	Mr. Jensen
Latin I		10	Mr. Jensen
German I	2	15	Prof. Arnold
German II		31	Prof. Arnold
German III		10	Prof. Arnold
French I		16	Prof. Arnold
French II		13	Prof. Arnold
French III		10	Prof. Arnold
Latin II		3	Prof. Arnold
English 25		5	Prof. Arnold

The department has also been able to help the English department by partial supervision of Student Life, by coaching the Agricultural Club play, and by giving this year a two hour course in journalism.

The work of the language department will be much increased, in all probability, next year. The requiring of third year preparatory students to take German I may necessitate three divisions of that class. If the registration in German II is any larger than it is this year the course should be given in two sections. Thus the work may increase seven hours, and, in view of this fact, the department asks for the services of an assistant who may give at least fifteen hours to the work.

Very respectfully submitted,

FRANK R. ARNOLD,

Prof. of Modern Languages.

October 17, 1910.

DEPARTMENT OF MUSIC.

To the President of the College,

Sir:—Herewith report of the music department as per your recent request:

The following classes are being conducted:

1. 50 Choir—teacher, G. W. Thatcher.
 - (a) Vocal Class.
 - 4 (b) Mixed Quartette.
 - 4 (c) Male Quartette.
 - (d) Opera Chorus.
- 33 Band and Band Beginners Class—Teachers, G. W. Thatcher and S. E. Clark.
- 18 Orchestra—Teacher, Wm. Spicker.
- 4 String Quartette—Teacher, Mrs. E. Linnartz.
- 12 Mandolin and Guitar Club—Teacher, Mrs. E. Linnartz.
- 40 Private Pupils, Vocal and Instrumental.
- 165 Total Enrollment. (Several of the foregoing items are estimated on account of the early date.)
2. Incidental work done by department staff: Private instruction to worthy pupils; preparatory instruction for orchestra, band, and club entrance. Accompaniments to student musicals, Wednesday morning musicals.
3. (a) Salary list should be if possible, \$3,500.00 per year.
- (b) We are in need of an organ for chapel work, the old one is out of tune and is really not up to the standard for our present needs. We ceased to use it last year. Orchestra and Band Music, \$100.00; Choir Music, \$50.00.
- (c) Tuning and repairing pianos for practice, \$100.

I believe this covers the information desired in your communication.

Respectfully submitted,

G. W. THATCHER,

Professor of Music.

October 17, 1910.

DEPARTMENT OF PHYSICAL EDUCATION.

FOR MEN.

To the President of the College,

Sir:—During the present biennium attention has been given to gymnasium work, as well as to athletics, by the department of physical education for men, but owing to the smallness of the gymnasium and its inadequate equipment, the students are urged to take part in some branch of athletics, consequently athletics receive the most attention during the fall and spring months, when the weather will permit of outdoor work.

Through the winter months a class in physical training consisting of elementary Swedish gymnastics and apparatus work was conducted in the gymnasium and although attendance was optional with the students the class had an average attendance of forty-five men.

In order to reach as many students as possible we support as many forms of sports as the present conditions demand.

In the fall months football receives the greatest amount of attention. A number of the track men work on the track and basketball men, who do not play football, work in the gymnasium. There are daily thirty or more football men on the field. As soon as the football season is over a class team basket ball championship is started which includes the two high school and four college classes. More than sixty men take part in this series of basket ball games and from then until the first of March the gymnasium is overcrowded with players. Also during this period a College basket ball team is being developed to compete with other intercollegiate teams. This main team keeps twelve men working.

After the first of March attention is again devoted to outdoor sports and daily there are two baseball teams and an average of thirty track men at work on the athletic field. All of these sports and the physical training receive my personal supervision. Attention is also given to lawn tennis and last year two courts were put in shape and a good deal of interest was manifested in the game.

Under the present conditions the present teaching force is sufficient except in the spring when the track team and the base-

ball teams are being developed at the same time.
 Needs. Better results would be derived if an assistant
 could be secured to work with the base ball team
 during the months of April and May.

The greatest need, not only for this department, but for the entire school, is a gymnasium, equipped with modern apparatus necessary for the best physical development for men and women. This gymnasium should be in a building separate from the main building and so arranged as to be suitable for all social functions of the College as well as for physical training purposes and athletic contests.

Under the present conditions the needs for the department are:

Assistant during the base ball season.....	\$ 150.00
Equipment.	
New apparatus and repairs for old	\$300.00
100 steel lockers.....	500.00
New bathing facilities.....	200.00 1,000.00
Supplies	1,000.00
Total	\$2,150.00

Respectfully yours,

C. T. TEETZEL.

Professor of Physical Education.

October 17, 1910.

FOR WOMEN.

To the President of the College,

Sir:—I respectfully submit the following as a report concerning the department of physical education for women.

There are now enrolled in this department 105 students distributed as follows:

First Year	50
Second Year	25
College	30
Total	105

Each girl has received a physical examination and been given an anthropometric chart upon which are recorded her measurements together with a special prescription for the care of her health.

It was the wish of the department to effect a grading of the work which would be comparable to that of history or English in order that students might feel the stimulation of a graded progress, but due to inadequate accommodation and a conflict in programs such graded work has been impossible. Both difficulties may readily be avoided by a better gymnasium and the organization of additional classes.

The greatest need of this department is one with the paramount need of the Institution—a new gymnasium, a building and equipment where truly effective work may be carried on according to the most scientific methods towards the physical efficiency of *all* college students. There are few students in the state in better physical condition than those entering the Utah Agricultural College and there are no students to whom the lack of gymnastic facilities may prove more fatal. The gymnasium stands the symbol of a clean, healthy, vigorous body and must combine its force with that of the class room to make the man or woman an educated being. Not only is the gymnasium a laboratory for the physical director but it may also be the recreation hall for the drama and dance. Therefore, all minor needs fade into insignificance or are incorporated within this major need—with all the best that the name implies—A New Gymnasium.

After two years experience I am thoroughly convinced that it will require all the time, best effort and ability of at least one well qualified director to maintain and care for the physical welfare of all girls attending the College. Such work should include not only class work in the gymnasium, but also physical examinations, private consultations with prescription of exercises, individual work when necessary, the teaching of out door sports, tennis, cross country running, etc., and lecture work on personal hygiene and first aid. This I am convinced will take the entire time of an energetic instructor.

I further recommend that every girl in the institution be required to take a physical examination every year and that the record of data obtained be filed in the office of the department; that a physician be employed who shall place part of his time at the disposal of students and to whom the physical director may send students in case findings need confirmation or that expert opinion be needed. Medical inspection of the College is an imminent need and towards that end the physical education department is ready to assist.

I sincerely feel that this department has outgrown its accommodations and that more room is needed before it can stand upon an equal basis with other departments. To this end then, I make this report with a final plea for a laboratory fit for the most perfect training and care of the health of our students.

Very sincerely,

CHARLOTTE STEWART,

Instructor in English and Physical Education for Women.

October 17, 1910.

DEPARTMENT OF PHYSICS.

To the President of the College,

Sir:—Herewith my report of the physics department for the present biennium with recommendations for the biennium beginning July 1st, 1911.

Courses have been given as follows:

1909-10 Course	Instructor	Number of Students		
Physics 1—1	Prof. West	22		
Physics 1—2	Prof. West	28	50	
Physics 2	Prof. West	6	6	
Physics 3	Prof. West	2	2	58
1910-11				
Physics 1—1	Mr. Saxer	37		
Physics 1—2	Mr. Saxer	29	66	
Physics 2	Mr. Saxer	5	5	71

During the year 1909-10 there were 2 laboratory sections which were conducted by Prof. West and Mr. Ralph. During the present year there are 4 laboratory sections which are conducted by Mr. Saxer and Mr. Jennings. During the present biennium the head of the department has been employed for 5 credit hours each year in the department of mathematics.

Our needs for the coming biennium will be as follows:

Teaching Force.

1 Professor, 1 Instructor, and 1 Assistant.

Equipment.

3 Sets of Laboratory Apparatus (as listed in the catalogue of Wm. Gertner & Co.) each year, 6 sets at \$75.00.....	\$ 450.00
1 L1001 Acceleration Apparatus	40.00
1 L1008 Torsion Apparatus.....	17.50
1 13005 Electrically Driven Tuning Fork.....	34.00
1 50Vib. Tuning Fork for Above.....	8.00
1 766 Crane Ballancen.....	7.50
1 2446 Resistance Box.....	40.00
1 3176 Wave Apparatus.....	11.00
1 3800 Balance	160.00
2 Laboratory Tables (\$25.00).....	50.00
1 Optical Lever.....	3.50
1 Katers Pendulum.....	24.00
1 Young's Modulus Apparatus.....	20.00
1 Tinsleys Harmonigraph.....	21.00
1 Bolyes Law Apparatus with Air Thermometer....	40.00
1 Torsion Pendulum.....	18.00
1 Norrenburg Polariscope.....	30.00
1 Good Prism for Spectrometer.....	6.00
1 Aadjustable slit for Telescope.....	12.00
1 Transparent Grating.....	25.00
1 Micrometer Microscope.....	75.00
1 Ballister D'Arsonval Galvanometer.....	35.00
1 Weston Milli-Voltmeter	60.00
1 Weston Milli-Ammeter	60.00
1 Earth Inductor.....	15.00
1 Cathetometer	60.00
Total	<hr/> \$1,322.50

Supplies.

Supplies such as Sulphuric Acid, Ether, Mercury, Acetamide, Dry Cells, Wire, etc., \$50.00 per year \$100.00

Repairs.

Labor for repairs will average \$50.00 per year.....	100.00
Sundry small items for the two years will be about..	82.00

Total for biennium.....\$1,604.50

The above recommendations for teaching force and supplies are based upon the assumption that when the school

courses are reconstructed during the present year, the course known as Physics 1, will become a high school course with 5 credit hours. When this change takes place and the ever increasing attendance of the school is taken into account there will necessarily have to be 3 sections in this course.

Respectfully submitted,

A. H. SAXER,

Acting Head of Physics Department.

October 17, 1910.

DEPARTMENT OF POULTRY HUSBANDRY.

To the President of the College,

Sir:—Complying with your request, I respectfully make the following brief report of the present condition of the department of poultry husbandry, and its probable needs during the next biennium.

The department is at present giving the general course in poultry for the first time during the fall term. There are at present ten students enrolled for this course, most, if not all of whom are intending to take more advanced work, which we are planning to offer for the first time next term. A list of students registered for next term's regular work is not at present available. Last year, there was a total enrollment of 37, divided as follows:—Course 1, 23; course 2, 2; winter course, 12. The winter course covered a period of five weeks, in which the majority of the students devoted their entire time to poultry work. This is the most extensive, and I believe most successful winter course, that the department has given. All of the above work was carried on during the second half of the school year, the writer having spent the greater part of his time during the first term assisting in farmers' institute work.

In connection with the winter course, Dr. Frederick kindly gave a number of demonstrations and lectures on the anatomy, physiology and more common diseases of poultry that were much appreciated. As most of the failures in the poultry business are directly due to preventable diseases and ravages of pests that, with a proper knowledge, might readily be controlled, I recommend that arrangements be made to have the College veterinarian hereafter conduct about a three-hour course for one term that will cover the important phases of this subject.

In considering the needs of the department, provision should be made especially for more effective demonstrational and experimental work, together with laboratory facilities, which we at present lack entirely. We appreciate very greatly the new incubator cellar which was recently provided, which makes us fairly well equipped for our work in artificial incubation; but we are considerably handicapped in not having representative fowls of the most important varieties for demonstrative purposes in the study of types and breeds and for the necessary experimental and practical work dealing with feeding and other important phases of the subject.

As already suggested, at least a modest laboratory should also be provided, equipped with gas fittings, a hot-water drying oven, a hot-air drying oven, a medium priced set of balances, a few dissecting pans and some other miscellaneous articles necessary for thorough work in studying principally the effect of different rations and methods of treatment on the growth of poultry, on egg production, and the utility qualities of the resulting products.

Steps have already been taken to get together suitable material for a museum, which should prove of utmost value as an educational exhibit to be used both in regular school work and for College extension work. In order to make a credible museum, however, both more time and funds are necessary than will be available the present year. Some appropriations should therefore be made for this purpose.

Considerable fencing is also required to replace much that is now broken down and to afford more room for both the Station and College work.

ESTIMATE OF FUNDS NEEDED FOR NEXT
BIENNIUM.

New Stock	\$200.00
Equipment for Laboratory—	
Balances	\$ 50.00
Two drying ovens.....	40.00
Miscellaneous	50.00
	<hr/>
	140.00
Furniture for Laboratory.....	60.00

Museum—

Exhibition cases	\$50.00
Charts	25.00
Enlarged photographs of record stock	25.00
Model coops, feed hoppers, etc.	100.00
Miscellaneous	25.00
	<hr/>
	225.00
Fencing	300.00
Miscellaneous	50.00
	<hr/>
Total	\$975.00

I appreciate very greatly the support received from the administrative officers and faculty of the Institution.

Very respectfully,

GEO. M. TURPIN,

Poultryman.

December 1, 1910.

DEPARTMENT OF VETERINARY SCIENCE.

To the President of the College,

Sir:—There are at present six courses in veterinary work :
Veterinary Science I, (Veterinary Elements), 48 students.
This course is repeated the second term.

Veterinary Science II, (Veterinary Anatomy), 10 students.

Veterinary Science III, (Dissection), 10 students.

Veterinary Science IV, (Animal Physiology), 12 students.

Veterinary Science VIII, (Clinics), for all veterinary science students.

All instruction in this department is given by myself. We are also carrying on experimental work, looking after the health of all animals belonging to the College and Station, helping out in farmers' institutes, investigating general outbreaks of disease among animals in different localities of the State and answering numerous questions regarding animal diseases.

We also have charge of the bacteriological department, with the teaching in connection with the above. For the com-

ing biennium, the bacteriological work should be separated from veterinary science and a separate professor given charge of the department of bacteriology.

At present, we are only offering enough veterinary science in the College so the students can go to a special school of veterinary medicine and get through in two years. During the past two years, some twenty students have left here and entered veterinary colleges in the East and in each case these students have been allowed full credits for the veterinary work done here.

Unless we offer more work along veterinary lines, the teaching force will not have to be increased but some assistance for outside work will have to be provided. One of the greatest needs of the department is a place under cover to hold our clinics. In the past we have been compelled to work outside in the rain and snow at some seasons of the year, thus endangering the students' health and not allowing efficient work to be accomplished.

As you know, money was appropriated for this purpose but the veterinary department has up to date not received it.

We are also greatly in need of more instruments, both for teaching and practical use at our clinic. We should have a number of charts and models on different subjects for class use. A number of cabinets and tables should be provided, with suitable specimen jars for preserving histological and pathological specimens for a museum.

We are compelled to get a supply of drugs and sundries each year. These are used for our own animals and at our clinic where a small fee is charged for medicines used, so that part of the expenditure is again returned to the College.

There is probably no building on the campus that is more in need of remodeling and improving than the veterinary hospital. We have a great many applications each year for hospital room for patients. This would also help in instruction if the students could see cases operated on or treated and watch their progress in the hospital. If we had a suitable building to take care of animals, it would be almost self-supporting.

There is probably no department in an agricultural college, where different kinds of animals are kept and where instruction is given regarding these animals, that is of greater importance than veterinary science; with the improvement of stock and the numerous diseases that are at present prevalent among livestock,

it is absolutely necessary that all agricultural students that handle animals have a slight knowledge of diseases, their prevention and treatment, so that they will know when it is necessary to call in professional aid. In a great many institutions there are a number of courses in veterinary science required of agricultural students; especially is this true in an animal husbandry major, but here we only require one course and the others are optional. We believe more should be required.

In my previous report, the erection of an isolation hospital was referred to and I would again urge that something be done regarding this, as it is very important where we have quite a number of valuable animals.

The following is an estimate of the requirements for the next biennium:

Clinic shed and remodeling hospital.....	\$2,000.00
Equipment, instruments, cabinets and tables	600.00
Museum cases and glassware.....	100.00
Supplies, drugs, medicines.....	250.00
Total	\$2,950.00

Respectfully submitted,

H. J. FREDERICK,

Professor of Veterinary Science.

October 17, 1910.

DEPARTMENT OF ZOOLOGY AND ENTOMOLOGY.

To the President of the College,

Sir:—The work of the department of zoology and entomology has gone on without interruption during the past biennium. The number of students entering the upper classes has considerably increased and the number of advanced courses elected last year was far greater than ever before. Prof. Titus' absence for post-graduate study during the present year and the inability to secure anyone qualified to take charge of the advanced work, has rendered it necessary to reduce the courses given this year to the minimum. There are, however, in school at the present time a number of students who wish to take major work in entomology. The number of horticultural students is rapidly increasing. These students will all desire a considerable amount of entomological training, most of which they are deferring until Prof. Titus' return. This means that the classes

in entomology will be unusually crowded upon his return next year. The following summary shows the present condition of the class work of the department:

	Sec.	Cred.	c.	Lab	Teacher	Students	Second Term		
							Cred.	Rec.	Lab.
Zoo. 1.....	1	2	2	2	Ballantyne	35	2	2	2
Zoo. 1.....	2	2	2	2	Ballantyne	19	2	2	2
Zoo. 1.....	3	2	2	2	Hoff.....	24	2	2	2
Zoo. 1.....	4	2	2		Hoff.....	13-91	2	2	
Zoo. 2.....	1	3	2	3	Hoff.....	19	3	2	3
Zoo. 2.....	2	3	2	3	Hoff.....	31-50	3	2	3
Zoo. 5.....		3	1	5	Hoff.....	7	3	1	5
Ent. 1.....		3	3		Ballantyne	39	(Is scheduled but may not be given)		
Ent. 2.....		3	2	3	Ballantyne	7	3	2	3
Zoo. 3.....					Ball.....		3	3	
Ball. 1½ credits.									
Hoff 13 credit hours. 9 rec., 17 lab. hours.									
Ballantyne..... 9 credit hours. 9 rec., 3 lab. hours.									
(helps in 6 hours. Zoo. 1, lab.)									

Besides the teaching work, this department has charge of the building up and care of the zoological museum. A large amount of general committee work has been taken care of by members of this department. Considerable time has been spent in extension lectures at the University and in farmers' institute work throughout the State. Besides this, the major portion of the work of the horticultural inspection course fell to this department.

In order to adequately handle the work during the coming biennium, it will be necessary to increase the teaching force. To provide the work that will be called for by students already enrolled in the Institution, it will be necessary to provide for the following teaching force:

One-half time, Prof. Titus.

Full time of one instructor.

One-half time of one assistant.

This will require a salary roll of about \$2,600.00 per year. Even with this teaching force, it will be impossible to do very much work outside of the class room during the school year.

The zoological department is fairly well equipped at the present time for most of the courses. Probably the greatest difficulty experienced at present is the lack of a sufficient num-

ber of microscopes to properly care for the laboratory work. Another rather pressing need of the department is a set of models of segmentation and development for illustrative work in zoology and embryology, also models of insect anatomy. For the work in embryology, one more set of embryological slides should be purchased. These illustrative models are used by practically all institutions and are of great assistance in the work. There have been, however, so many other things needed previous to this time that their purchase has not been urged. In order to properly care for the collections that will be made in the ordinary course of field work, additional cases and glassware for the museum, insect cases and stands should be purchased.

There is at the present time no photomicrographic apparatus in the Institution. It is probable that one of these would be sufficient for the use of all departments for some time to come. It would be found very useful in making photographs to illustrate extension lectures, as well as in making permanent records of microscopic objects as guides for work in histology, plant physiology, bacteriology and the like. The following is a summary of the equipment needed by the department:

10 Students microscopes	\$300.00
Set of models of segmentation and development.....	70.00
Models insect anatomy (Herdeman).....	60.00
1 Set slides for embryology.....	40.00
Filing cabinets	35.00
Laboratory chairs	20.00
1 Photomicrographic apparatus (with lenses complete)	120.00
Miscellaneous equipment	100.00
2 Museum cases	180.00
Insect boxes and stands.....	80.00
Museum glassware	100.00
<hr/>	
Total	\$1,105.00

The following is a summary of the supplies that will be necessary to carry on the work of the department in a creditable manner. The sum requested will be considerably exceeded by the fees received in the laboratory courses.

SUPPLIES.

Zoology and embryology, supplies, dissecting material, glassware, chemicals, slides and mounts, etc. \$250.00

Entomological Supplies.

Pins, labels, cork, glassware, etc. 100.00

Physiology Supplies.

Replacement broken skeletons, glassware, slides, etc. . . . 150.00

Total \$500.00

The work of the department of zoology and entomology is two-fold in character. First, the furnishing of a fundamental knowledge of physiology and zoology required of students in all courses; and, secondly, the special training of advanced students for their life work. In the second phase of the work, the department has a wide field. The development of Western horticulture is to a very large extent a problem of perfect fruit, and in this development, the entomological department shares equally with that of the horticultural in bringing about this end. There is also a large field in the development of horticultural inspectors and trained entomologists for the Western work. With the return of Prof. Titus next year and the provision of a sufficient teaching force, the department will be in a position to do thorough and satisfactory work in these lines.

Respectfully submitted,

E. D. BALL,

Acting Professor of Zoology
and Entomology.

October 17, 1910.

REPORT OF SUPERINTENDENT OF BUILDING AND GROUNDS.

To the President of the College,

Sir:—I herewith submit my report as superintendent of buildings and grounds for the biennial period ending October 20th, 1910.

The most important item I have to report is the comple-

tion of the remodeling of the old dormitory and changing it into the present woman's building.

Another item of importance was the erection of the stock judging pavilion for the animal husbandry department.

New maple floors were laid in the main building where the old pine floors had become worn. The first cost of laying maple floors is greater than for the pine floors but they last much longer. Most of the class-rooms have been calcimined and painted, the floors oiled, etc., and the building put in a good condition.

I would recommend the following changes and improvements for the coming two years:

A central heating plant; the present boiler house is too small for our needs, and because of its location is more or less dangerous to the main building. It should be moved to one of the flats southwest of the main building and connected with the different buildings by tunnels. This would cost about \$25,000.00. If this cannot be done an additional boiler should be purchased to enlarge the present plant. This would cost about \$2,500.

Raising the present chimney about 25 feet would cost about	\$ 500.00
Fuel for the next two years (estimated)	9,000.00
Labor firing, two years	800.00
Steam repairs and changes	500.00

WATER WORKS AND SEWERAGE.

Repairs on toilets, washbasins, sinks, pipes	200.00
Repairs on water-works and extension to ball ground	500.00

PAINTING.

A number of the buildings need painting, floors oiled, furniture varnished, etc. Cost	5,000.00
New maple floors for the main entrance and hall, main hall on the second floor, and general repairs on class-room floors	3,000.00
Window lights and blinds	350.00
Locks, keys, hinges, screws, springs, etc.	150.00
Retaining wall for terrace at woman's building, new steps up the terrace, cement walks	1,000.00

Cement walk from Station building to north entrance of the main building.....	1,000.00
New fence around the College property.....	1,500.00
Cement walk from south entrance of the main building to the mechanic arts building.....	100.00
Lamps, drops, switches and needed wiring in east main building and north wings.....	1,000.00
Tools, oil, etc., for general repair work.....	100.00

Respectfully submitted,

CHARLES BATT,

Superintendent of Buildings and Grounds.

October 20, 1910.

REPORT OF THE HEAD JANITOR.

To the President of the College,

Sir:—Pursuant with your request of October 5, I submit the following estimate of the needs for janitorial work for the biennium beginning July 1st, 1911.

For Student and other labor. (This does not include salary for head janitor and assistant).....	\$3,400.00
For supplies	650.00
Total	<u>\$4,050.00</u>

You will observe that this is a small increase over the estimate for the last two years, but since we have now two more buildings under our care it cannot be considered at all too high. If other buildings, requiring our work, should be added a corresponding increase in this estimate would have to be made.

Respectfully submitted,

R. O. LARSEN,

Head Janitor.

October 18, 1910.

REPORT OF THE REGISTRAR.

To the President of the College,

Sir:—Judging the progress of the College by the records of the Registrar's office would certainly make one very optimistic for the future of the school. Of late, each year finds a greater number of names on our books, and the persons they represent come from broader sections of our State and from other states and countries, some far away. As the detailed reports will show, our net total attendance for 1908-9 was 832; for 1909-10, 1,044; and the prospects are that for 1910-11 the number will reach 1,200 or 1,300. What, however, is more encouraging than number, is the grade of students registering. The lower high school classes are rapidly decreasing.

The number of persons doing legitimate college work has multiplied many fold in the past ten years. It now begins to look as if the preparatory classes, organized as then thought temporarily, on the opening of the school in 1890, will soon be things of the past; but as they go, their places will be taken by larger classes of young men and women who have had better educational opportunities in their home towns, and go away only when they want more advanced work. Such young people are increasing in numbers rapidly, and will swell the ranks of our high schools, academies, colleges and universities until all will be compelled to increase their accommodations. Of this growing crowd, the Agricultural College will surely get its proportion or more, and in the future, may be numerically in the lead because its work must more and more appeal to the mass of the people, who are compelled to combine culture in the pursuit of knowledge with utility in the pursuit of material things.

Figures being regarded as proof of assertions, the tables following this report will better indicate what has been said above.

Estimate of needs of Registration office, including Committees on Attendance and Scholarship and Student Affairs:

Salary of Clerk—10 mos., at \$60.00—2 years.....	\$1,200.00
Extra help in recording, etc., 2 yrs. at \$100.00.....	200.00
Engrossing Diplomas and Certificates 150 at 75 cents	112.50
1,200 lbs. Manila Paper for test work, etc.	90.00

Printing.

2,000 Recitation Record Sheets		20.00
10,000 Student Time Cards	2.25	22.50
20,000 Teachers Daily Report Blanks	2.50	50.00
2,000 Teachers Term Report Blanks	10.00	20.00
1,500 Attendance Record Cards		20.00
2,000 Boarding House Directory Cards	3.25	6.50
2,500 Application Cards	10.00	25.00
2,500 Registration Cards	10.00	25.00
15,000 Enrollment Cards	2.10	31.50
10,000 Excuse Cards	2.00	20.00
500 Petitions to Faculty	1.00	5.00
500 Petitions to Committee		5.00
1,000 Orders for Changes		4.50
500 Cards, Records of Students Ab- sences		10.00
600 Sheets, Reports of Students Grades		3.50
Examination Questions		60.00
20 M. Sheets paper for Exclusion Lists		17.00
20 rms. Blue Bond Paper made into books for examinations	3.25	65.00
		410.50
Letter Heads, typewriting paper, etc		20.00
*10 M. Envelopes—2c stamped		114.00
Miscellaneous Stationery, pens, ink paper, etc.		20.00
		154.00
Total		<u>\$2,167.00</u>

*We shall probably have an average of 700 reports to make out five times a year, besides the correspondence of the Registrar and Committees in the office.

Respectfully submitted,

JOHN T. CAINE, JR.,

Registrar.

October 29, 1910.

REGISTRAR'S REPORT OF ATTENDANCE BY SCHOOLS FOR THE YEAR
1909-10 TO MAY 26, 1910.

	Agr.	D. Sci.	Com.	M. A.	G. Sci.	Musio	Total	Grand Total
COLLEGE COURSES:								
Graduates	2						2	
Seniors	17	13	6		6		42	
Juniors	34	11	5		9		59	
Sophomores	23	10	13	1	10		59	
Freshmen	40	12	7		22		81	
Specials	2	3			24	8	37	
TOTALS	118	51	31	1	71	8		280
HIGH SCHOOL:								
4th Year				2			2	
3rd Year	3	6	11	5			25	
2nd Year	43	22	34	12			111	
1st Year	56	57	45	51			218	
Optionals	2	16	2	1	3	4	28	
TOTALS	114	101	92	71	3	4		384
COLLEGE PREPARATORY:								
2nd Year					28		28	
1st Year					10		10	
TOTALS					38			38
WINTER COURSE:								
Forestry	62						62	
Hort. Insp.	30						30	
Round-Up	87						87	
House K. C.		12					12	
Dom. Sci.		4					4	
Mechanic Arts				37			37	
Commerce			15				15	
TOTALS	179	16	15	37				347
SUMMER SCHOOL:								
								115
GRAND TOTALS	411	168	138	109	112	12		1064
Less names repeated.. . . .								20

REGISTRAR'S REPORT OF ATTENDANCE BY SCHOOL TO
Dec. 3rd, 1910.

	Agr.	Dom. Sci.	Com.	M. A.	Gen'l Sci.	Music	Total	Grand Total
COLLEGE COURSES								
Graduates					5		5	
Seniors	48	10	4		10		72	
Juniors	23	11	6		5		45	
Sophomores	28	12	8	2	12		62	
4th Year				3				
Freshmen	29	16	11		21		87	
3rd Year		11	9	5			25	
Specials	1	3	3		20	6	33	
TOTALS	139	63	41	10	73	6	...	332
HIGH SCHOOL								
4th Year	{ See							
3rd Year	{ Col.							
2nd Year	44	20	31	16	3		114	
1st Year	53	42	43	58			196	
Optionals	2	2	1	1			6	
TOTALS	99	64	75	75	3		...	316
COLLEGE PREPARATORY								
2nd Year					10		10	
1st Year					21		21	
TOTALS					31		...	31
SHORT COURSE								
2nd Year				1			1	
1st Year	24	7	3	18			52	
TOTALS	24	7	3	19			...	53
	262	134	119	104	107	6	...	732
SUMMER SCHOOL								
								140

INSTITUTIONS REPRESENTED ON FACULTY.

INSTITUTION	Total No. of Faculty having had Training in each institution	Total No. of Faculty having received Degrees from each institution
Academic de Neuchatel, Switzerland..	1	0
Agricultural College of Utah.....	34	22
Bowdoin College	1	1
Brigham Young College.....	4	2
Brigham Young University.....	2	1
Colorado Agricultural College.....	1	1
Columbia University (Teacher's Col- lege)	4	3
Cornell University	3	2
Georgia Military Institute	1	1
Harvard University	11	8
Iowa State College.....	4	3
King's Conservatory, Leipzig.....	1	0
Leland Stanford University.....	3	1
Michigan Agricultural College.....	1	0
New England Conservatory of Music	1	0
New Hampshire Agricultural College	1	1
Ohio State University.....	2	1
Oswego (N. Y.) State Normal School	1	0
Park College	1	1
Polytechnicum of Zurich	1	0
Pratt Institute	1	0
Purdue University	1	1
University of Berlin.....	1	0
University of Bordeau.....	1	0
University of California.....	2	0
University of Chicago	8	0
University of Colorado	1	0
University of Goettingen.....	2	1
University of Halle	1	1
University of Illinois	3	3
University of Michigan.....	3	3
University of Paris	2	0
University of Utah	5	3
University of Wisconsin	2	2

REPORT OF THE SECRETARY.

To the President of the College,

Sir:—In compliance with your recent request for a report on the Secretary's office, will state that it is at the present time in fairly good condition. I am contemplating, however, making a considerable number of changes in our system of purchasing, paying and accounting during the coming summer vacation. As you are aware I spent my vacation last summer in attending a convention of college secretaries and registrars at Detroit, Michigan, and in visiting and studying the systems of some of the large institutions of the East. I am at the present time working on a number of changes and expect to have them worked out and ready to submit for approval by April next.

In regard to our requirements for next year I beg to submit the following estimate:

FOR TWO YEARS ENDING JUNE 30, 1913.

Office Assistant and Clerk.....	\$1,440.00
Bookstore Assistant and Stenographer.....	960.00
Postage and Stationery and Office Supplies.....	400.00
New Records, etc.	100.00
Additional Vault Furniture.....	100.00

Total \$3,000.00

We will receive from profit on bookstore over.....\$1,200.00

The Experiment Station will pay of salaries at the
present rate 2,200.00

\$3,400.00

Total cost to College two years..... 3,000.00

The above estimates are made on the lowest possible basis that will insure efficient work. Our clerk help should be paid a little more than in the past so as to make it more permanent.

Respectfully submitted,

JOHN L. COBURN,

Financial Secretary.

October 26, 1910.

LIST OF PERSONS EMPLOYED DURING BIENNIUM ENDING NOVEMBER, 30, 1910.

April 15, 1909.

A. C. Young, State Veterinarian.

July 1, 1909.

Ellen A. Huntington, Prof. of Home Economics.

George B. Hendricks, Assistant Prof. of Economics.

Mary Parmelee, Assistant Prof. in Domestic Arts.

Charlotte Stewart, Instructor in Eng. & Phy. Ed. for Women.

David Hughes, Assistant in Woodwork.

E. P. Hoff, Assistant in Zoology.

E. T. Halph, Assistant in Chemistry.

Coral Kerr, Assistant in Domestic Arts.

Albert Angermeyer, Instructor in Violin.

Ruby Nebeker, Experiment Station Stenographer.

James Haslam, Assistant in Sec'y's Office.

Byron Alder, Assistant in Carpentry.

Heber J. Webb, Assistant in Forging.

Mrs. Eda Dehlin, in charge of Cafeteria.

September 1, 1909.

William H. Homer, Professor in Horticulture.

October 1, 1909.

L. W. Caffey, Professor in Military Science and Tactics.

Sadie E. Kinsel, Instructor in Stenography and Type-writing.

October 15, 1909.

Frank S. Hayden, Farmers' Institute Lecturer.

George C. Jensen, Instructor in Modern Languages.

January 1, 1910.

J. E. Rothery, Professor in Forestry in Winter Course.

E. T. Hirst, Assistant in Chemistry.

March 1, 1910.

Mrs. C. C. Clayton, Clerk, Extension Department.

April 15, 1910.

Marie Havertz, Maid in Domestic Science.

July 1, 1910.

Wilbert S. Drew, Professor of Farm Mechanics.

Harrison C. Dale, Assistant Professor of History.

Parley E. Peterson, Instructor in Accounting.

A. H. Saxer, Instructor in Physics.

Florence M. Brown, Instructor in Domestic Science.

William Spicker, Instructor in Violin.
 Florence Dudley, Instructor in Domestic Science.
 Katherine S. Clark, Instructor in English.
 Amelia Manning, Instructor in English.
 Edward H. Watson, Instructor in Mathematics.
 Canute Peterson, Instructor in Stenography.
 Willard Gardner, Experiment Station Stenographer.
 Mrs. Bessie Day, Instructor in Typewriting.
 L. A. Stevens, Instructor in Penmanship.
 Annie Meyers, Instructor in Piano.
 Mamie Munroe, Assistant in Bookstore.
 Miss Sophia Hansen, in charge of Cafeteria.

August 1, 1910.

A. B. Ballantyne, Instructor in Zoology & Ent. & Scientific
 Assistant, Southern Exp. Farm.

September 1, 1910.

Leon D. Bachelor, Prof. of Horticulture.

September 15, 1910.

Katherine Adams, Assistant Domestic Arts.

November 1, 1910.

William Peterson, Prof. of Geology.

LIST OF RESIGNATIONS DURING BIENNIUM END- ING NOVEMBER 30, 1910.

December 30, 1908.

Fred. M. Walker, Prof. of Physical Education.

May 31, 1909.

W. W. Olsen, Experiment Station Stenographer.

June 30, 1909.

William Peterson, Prof. Geology & Physics.

R. S. Northrop, Prof. of Horticulture & Botany.

E. G. Peterson, Assistant Prof. Zoo. & Entomology.

William Spicker, Instructor in Violin.

Gertrude Vibrans, Assistant in Domestic Arts.

William A. Frew, Assistant in Forging.

J. R. Horton, Assistant in Entomology.

September 15, 1909.

A. M. Davis, Instructor in Stenography & Typewriting.

October 1, 1909.

Captain Howard R. Perry, Prof. Military Science &
 Tactics.

December 15, 1909.

Frank S. Hayden, Farmers' Institute Lecturer.

January 14, 1910.

E. H. Walters, Assistant Experiment Station Chemist.

January 23, 1910.

Roy Rudolph, Instructor in Mathematics.

January 31, 1910.

Amanda Holmgren, Assistant Prof. in English.

February 28, 1910.

Maggie Johnson, Stenographer Extension Department.

Fee Mathison, Assistant to Secretary.

April 15, 1910.

Helen Jacobson, Maid Domestic Science Department.

April 30, 1910.

Joseph Benson, Foreman in Agronomy.

June 30, 1910.

J. Percy Goddard, Assistant Professor of Accounting.

I. B. Evans, Assistant Professor of History.

T. E. Woodward, Assistant Professor of Dairying.

Mary Parmelee, Assistant Professor of Domestic Arts.

Sadie E. Kinsel, Instructor Stenography & Typewriting.

Lizzie O. McKay, Instructor in Domestic Science.

Hazel Love, Instructor in Domestic Science.

Albert Angermeyer, Instructor in Violin.

Lettie Lund, Secretary's Clerk.

Ruby Nebeker, Experiment Station Stenographer.

Mrs. Dehlin, in charge of Cafeteria.

September 1, 1910.

William H. Homer, Professor in Horticulture.

November 1, 1910.

Harry C. Parker, Assistant Professor in Geology.

MEMBERS OF THE BOARD OF TRUSTEES WITH DATES OF SERVICE.

Caleb W. West.....	1888-1890
W. C. Hall.....	1888-1890
James T. Hammond.....	1888-1890
J. H. Wilcox.....	1888-1890
Jesse W. Fox, Jr.	1888-1890
A. O. Smoot, Jr.	1888-1890
W. S. McCornick.....	1890-1907

William H. Brown.....	1890-1892
Christian F. Olsen.....	1890-1892
Robert W. Cross.....	1890-1894
Melvin B. Sowles	1890-1892
John E. Hills.....	1890-1892
Alonzo R. Heywood.....	1892-1894
Joseph B. Keeler.....	1892-1894
A. George Barber.....	1892-1896
William R. Stover.....	1892-1894
J. W. McNutt.....	1894-1895
William P. Nebeker.....	1894-1896
Achilles Perrin	1894-1896
Aaron F. Farr, Jr.	1894-1896
David C. Hubbard.....	1894-1895
M. D. Lessinger.....	1895-1896
B. H. Roberts.....	1895-1896
Sara Godwin Goodwin.....	1896-1897
Emily S. Richards.....	1896-1905
Marriner W. Merrill.....	1896-1900
David C. Adams.....	1896-1903
John C. Graham.....	1896-1898
Lorenzo Hansen	1896-1905
Clarissa S. McAlister.....	1897-1898
Joseph Morrell	1898-1901
Rosina N. Bagley.....	1898-1905
John A. McAlister.....	1900-1907
Seth A. Langton.....	1901-1903
George C. Whitmore.....	1903-1907
Evan R. Owen.....	1903-1907
Lorenzo N. Stohl.....	1905-
Thomas Smart	1905-
Susa Young Gates.....	1905-
John Q. Adams.....	1907-
Elizabeth C. McCune.....	1907-
J. W. N. Whitecotton.....	1907-
A. S. Condon.....	1907-1909
Mathonihah Thomas	1909-
John Dern	1909-
John C. Sharp.....	1909-

Alumni Association.

To the President of the College,

Sir:—I have great pleasure in submitting for your consideration the following report of the condition of the Utah Agricultural College Alumni. The subjoined tables show three groups of facts about the membership:

1. General Statistics and Present Whereabouts of all Members.
2. The Academic Training or Scholarship of all Members.
3. The Occupations, by groups, of all Members.

There remain but little additional to give, save a word as to the aims and activities of the society.

The Association was formed and exists primarily to further the welfare of the Utah Agricultural College. A secondary aim, often coalescing with the chief aim, is to promote sociability and good feeling among the members.

The activities of the Association are not numerous. They are at present limited to keeping in touch by correspondence with all the members, and each week supplying each one with the official organ of the Association, *Student Life*. In addition, the custom of entertaining the senior class in the course of the winter has been inaugurated. The Association gives a grand ball on the first Monday after the opening of school in January. At Commencement time we have an annual business meeting and social reunion, the Alumni Banquet, and the closing ball.

Last May the Honorable Board of Trustees asked the Alumni Association to appoint an advisory committee of Alumni to make recommendations to the Board concerning the administrative, instructional, or other work of the Utah Agricultural College. In the course of the summer a committee, consisting of L. A. Merrill, '95, chairman, J. E. Shepard, '94, and Miss Lizzie O. McKay, '09, was appointed. These graduates are making a study of conditions at the College in order to present a report to the Board of Trustees.

The Association has published Volume I of the U. A. C.

Graduate, being a history of the society and of each member up to and including the class of 1909. The prospects for a second volume are encouraging; much material is already on hand.

ALUMNI STATISTICS.

Number of Classes Graduated.—Number in each Class.

I.	Class of 1894.....	6 Graduates
II.	Class of 1895.....	2 Graduates
III.	Class of 1896.....	7 Graduates
IV.	Class of 1897.....	14 Graduates
V.	Class of 1898.....	5 Graduates
VI.	Class of 1899.....	10 Graduates
VII.	Class of 1900.....	8 Graduates
VIII.	Class of 1901.....	5 Graduates
IX.	Class of 1902.....	3 Graduates
X.	Class of 1903.....	10 Graduates
XI.	Class of 1904.....	13 Graduates
XII.	Class of 1905.....	19 Graduates
XIII.	Class of 1906.....	3 Graduates
XIV.	Class of 1907.....	8 Graduates
XV.	Class of 1908.....	10 Graduates
XVI.	Class of 1909.....	20 Graduates
XVII.	Class of 1910.....	36 Graduates

Total membership of the seventeen classes, 179. Three of the alumni—W. B. Dougall, '94, Mrs. Anna Sponberg McCarty, '97, and John S. Baker, '99—have died, leaving a total of 176 living members. The class of 1911 promises to add 58 to this number, bringing the membership well above the 200 mark.

Total Number Graduated by the Utah Agricultural College with the Degree of B. S.	179
Alumni	128
Alumnae	51
Number of Members Living.....	176
Alumni	126
Alumnae	50
Number of Members Deceased.....	3
Alumni	2
Alumnae	1

Married Alumni	80
Married Alumnae	20
Total	100
Unmarried Alumni	46
Unmarried Alumnae	30
Total	76
Grand Total	176
Number of Alumni who have taken post-graduate work..	52
Number at present taking post-graduate work.....	18

A COMPLETE ALPHABETICAL LIST OF ALUMNI OF
THE AGRICULTURAL COLLEGE, WITH
ADDRESSES, DECEMBER, 1910.

1. Hugh Robert Adams, '09; Mendon, Utah.
2. Alfred E. Aldous, '10; 316 12 Ave. S. E., Minneapolis, Minn.
3. Irvin Allred, '06; Bureau of Lands, Manila, P. I.
4. Rodney Chase Allred, '10; Nephi, Utah.
5. Jessie Christine Anderson, '09; New Harmony, Utah.
6. Mrs. Victoria Lundberg Anderson, '97; Box 184, Pocatello, Idaho.
7. Frederick H. Atkinson, '98; Baker City, Oregon.
8. Mrs. Clara Foster Bacon, '97; Logan, Utah.
9. John Simon Baker, '99; (Deceased).
10. Alando B. Ballantyne, '10; U. A. C., Logan, Utah.
11. Richard S. Ballantyne, '97; 1161 Buenõ Ave., Salt Lake City.
12. John H. Bankhead, '97; Logan, Utah.
13. James E. Barrack, '05; Fairbanks, Alaska.
14. Charles E. Barrett, '10; Stone, Idaho.
15. Helen L. Bartlett, '10; 361 E. 3rd Ave., Salt Lake City.
16. William Duke Beers, '99; Northport, Washington.
17. Earl Bennion, '09; R. F. D., Murray, Utah.
18. Ethel Bennion, '10; L. D. S. U., Salt Lake City, Utah.
19. Mrs. Nellie Hayball Bennion, '09; R. F. D., Murray, Utah.
20. Verna Pearl Bowman, '05; Heyburn, Idaho.
21. Charles Franklin Brown, '03; 2540 So. 7th E., Salt Lake City.
22. Asa Bullen, '10; 78 Dana St., Cambridge, Mass.
23. Blanche Elise Caine, '05; High School, Salt Lake City.

24. John T. Caine, '94; U. A. C., Logan, Utah.
25. John T. Caine, III, '03; U. A. C., Logan, Utah.
26. Thomas C. Callister, '03; Fillmore, Utah.
27. Philip Vincent Cardon, '09; U. S. D. A., Washington,
D. C.
28. Ernest Carroll, '09; 707 High St., Urbana, Ill.
29. Heber Carver, '08; Brigham, Utah.
30. Mrs. Geneva Egbert Chase, '04; R. F. D., Farmington,
Utah.
31. John L. Coburn, '05; U. A. C., Logan, Utah.
32. Blanche Cooper, '01; U. A. C., Logan, Utah.
33. Edmund Crawford, '04; Castle Dale, Utah.
34. Stanley Crawford, '00; Manti, Utah.
35. Will Fred Culmer, '95; 273 E. 1st So., Salt Lake City.
36. Ray B. Curtis, '10; Victor, Idaho.
37. Mrs. Esther Evans Davis, '01; Malad, Idaho.
38. William P. Day, '09; Brigham, Utah.
39. Veda Dixon, '10; Payson, Utah.
40. William B. Dougall, '94; (Deceased).
41. Florence I. Dudley, '10; U. A. C., Logan, Utah.
42. Mrs. Hazel Love Dunford, '05; 1675 So. West Temple,
Salt Lake City.
43. Robert W. Erwin, '94; 703 Bank of Commerce Bldg., St.
Louis, Mo.
44. Robert J. Evans, '09; Cornell U., Ithaca, N. Y.
45. Eva Farr, '05; High School, Ogden, Utah.
46. Francis David Farrell, '07; 443 Yates Bldg., Boise, Ida.
47. Grace Fisher, '03; Stout School, Menominee, Wis.
48. Ray H. Fisher, '04; Oxford, Idaho.
49. Burton P. Fleming, '00; U. of Iowa, Iowa City, Iowa.
50. Charles E. Fleming, '09; 316 12th Ave. Minneapolis,
Minn.
51. Leon Fennesbeck, '09; 926 E. 62nd St., Chicago, Ill.
52. John J. Fredrickson, '05; Malad, Idaho.
53. Robert J. Gordon, '99; Lethbridge, Alberta, Canada.
54. Joseph E. Greaves, '04; 1909 University Ave., Berkeley,
California.
55. Joseph Grue, '10; Farmington, Utah.
56. Alva Hansen, '08; Weber Academy, Ogden, Utah.
57. Joel J. Harris, '98; Adams Ave., Ogden, Utah.
58. Alfred A. Hart, '97; Bloomington, Idaho.
59. Hermoine S. Hart, '97; Paris, Idaho.

60. Odessie L. Hendricks, '10; 190 W. 1st N., Logan, Utah.
61. George Richard Hill, '08; 122 Linden Ave., Ithaca, N. Y.
62. Mrs. Edith Rudolph Hillman, '05; Oxford, Idaho.
63. Charles T. Hirst, '10; U. A. C., Logan, Utah.
64. Ernest P. Hoff, '09; U. A. C., Logan, Utah.
65. James C. Hogenson, '99; U. A. C., Logan, Utah.
66. Lydia Holmgren, '03; Brigham, Utah.
67. Ray Fisher Homer, '04; Nephi, Utah.
68. Russell K. Homer, '08; R. F. D., Provo, Utah.
69. William H. Homer, Jr., '00; Pleasant Grove, Utah.
70. John Raymond Horton, '09; U. S. D. A., Lindsay, Cal.
71. Ellis Hudman, '08; Evanston, Wyo.
72. Mrs. Ella Maughan Hull, '05; Preston, Idaho.
73. Thomas H. Humphreys, '97; 193 So. Main, Logan, Utah.
74. Alexander Ray Irvine, '98; 2121 So. 7 E., Salt Lake City.
75. Mrs. Minnie Peterson Isgreen, '06; 44 W. 2nd No., Salt Lake City.
76. Eunice Estella Jacobson, '08; 5650 Ellis Ave., Chicago, Illinois.
77. Julius Hall Jacobson, '09; Mescalero, New Mexico.
78. James Tertius Jardine, '04; U. S. D. A., Forest Service, Washington, D. C.
79. William M. Jardine, '04; 1020 Houston St., Manhattan, Kansas.
80. Charles A. Jensen, '97; U. S. D. A., Washington, D. C.
81. Christian N. Jensen, '08; Cornell Univ., Ithaca, N. Y.
82. Hans E. Jensen, '08; Ephraim, Utah.
83. Joseph W. Jensen, '00; U. A. C., Logan, Utah.
84. James L. Kearns, '07; Park City, Utah.
85. Alice Kewley, '10; Nephi, Utah.
86. Willard S. Langton, '96; 33 W. 126th St., New York.
87. Andrew B. Larsen, '94; 315 So. 4 W., Provo, Utah.
88. Christian Larsen, '96; U. A. C., Logan, Utah.
89. Mrs. Mamie Smith Larsen, '97; Dingle, Idaho.
90. Ethel Lee, '09; Hoytsville, Utah.
91. Orville L. Lee, '10.
92. Amy J. Leigh, '10; Rexburg, Idaho.
93. Orson G. Lloyd, '10; 15 E. Gorham St., Madison, Wis.
94. Mrs. Anna Sponberg McCarty, '97; (Deceased).
95. Charles A. McCausland, '04; Logan, Utah.
96. Lizzie O. McKay, '09; Weber Academy, Ogden, Utah.
97. Walter W. McLaughlin, '96; 139 E. Center, Logan, Utah.

98. Alexander M. McOmie, '10; Univ. of Ariz., Tuscon, Ariz.
99. Amelia Manning, '10; U. A. C., Logan, Utah.
100. Fred Mathews, '07; Springville, Utah.
101. Elizabeth C. Maughan, '00; Paris, Idaho.
102. Josephine F. Maughan, '03; Shelley, Idaho.
103. Inez Maughan, '10; 342 N. 1st East, Logan, Utah.
104. Lavinia Maughan, '10; 342 N. 1st E., Logan, Utah.
105. Ambrose P. Merrill, '03; Provo, Utah.
106. Amos Merrill, '96; Provo, Utah.
107. Fred W. Merrill, '99; Beaver, Utah.
108. Lewis A. Merrill, '95; 512 Vermont Bldg., Salt Lake City.
109. Lorin A. Merrill, '96; 368 Center, Logan, Utah.
110. Melvin C. Merrill, '05; 302 Mitchel St., Ithaca, N. Y.
111. Frank Moench, '07; Evans Bldg., American Falls, Idaho.
112. Samuel P. Morgan, '04; Franklin, Idaho.
113. Mrs. Martha Hoyt Myrick, '94; Marion, Utah.
114. Acquilla C. Nebeker, '03, 85 Carolina, Manila, P. I.
115. James W. Nelson, '00; U. S. D. A., Washington, D. C.
116. William B. Oldham, '10; Rexburg, Idaho.
117. Aaron B. Olson, '07; 547 E. 4th N., Logan, Utah.
118. Daniel L. Pack, '09; Spanish Fork, Utah.
119. Eugenio S. Pierce, '05; Shaw Bldg., Boise, Idaho.
120. James D. Pence, '10; Mountain Home, Idaho.
121. Mary Almeda Perry, '01; Vernal, Utah.
122. Susannah Perry, '10; Ephraim, Utah.
123. Dean F. Peterson, '10; Scipio, Utah.
124. Elmer George Peterson, '04; care O. A. C., Corvallis,
Oregon.
125. Erastus Peterson, '10; U. A. C., Logan, Utah.
126. Joseph H. Peterson, '99; Huntsville, Utah.
127. Preston Geddes Peterson, '07; Provo, Utah.
128. Willard L. Peterson, '10; Nephi, Utah.
129. William Peterson, '99; U. A. C., Logan, Utah.
130. Mrs. Anna Beers Petty, '98; 2210 Jefferson Ave., Ogden,
Utah.
131. Charles Pond, '97; Lewiston, Utah.
132. Charles Walter Porter, '05; U. A. C., Logan, Utah.
133. Inez Powell, '07; Cedar City, Utah.
134. Edward P. Pulley, '02; U. A. C., Logan, Utah.
135. Frederick D. Pyle, '03; Mitchell, Nebraska.
136. Aaron Rasmussen, '10; Rexburg, Idaho.
137. Josiah, L. Rhead, '96; Coalville, Utah.

138. Mrs. Mildred Forgeon Rich, '06; Burley, Idaho.
139. Samuel Grover Rich, '05; Burley, Idaho.
140. Benjamin F. Riter Jr., '07; 258 13th St., Portland. Ore.
141. William Corlett Riter, '10; Sigma Chi Fraternity House,
Salt Lake City, Utah.
142. Roy Rudolph, '05; Logan, Utah.
143. Mrs. Amanda Holmgren Santschi, '02; Fort Douglas,
Utah.
144. Eugene Santschi, '08; Fort Douglas, Utah.
145. Vincent A Sadler, '10; U. A. C., Logan, Utah.
146. Arthur H. Saxer, '10; U. A. C., Logan, Utah.
147. Joseph E. Shepard, '94; Logan, Utah.
148. Walter W. Simmonds, '99; Salmon City, Idaho.
149. Charles B. Smith, '01; Box Y., Twin Falls, Idaho.
150. James H. Smith, '05; 1506 Monroe St., Spokane, Wash.
151. Winnifred Smith, '10; New Jersey Academy, Logan,
Utah.
152. Mrs. May Maughan Snow, '03; Provo, Utah.
153. Nora Sonne, '10; Rigby, Idaho.
154. David E. Stevens, '04; U. S. D. A., Washington, D. C.
155. John Stewart, '97; Box 131, Logan, Utah.
156. James H. Stewart, '10; Richmond, Utah.
157. Robert Stewart, '02; U. A. C., Logan, Utah.
158. Robert H. Stewart, '10; Farmington, Utah.
159. Arthur P. Stover, '99; 207 Tilford Bldg., Portland, Ore.
160. Mattie E. Stover, '01; 2918 Benvenue Ave., Berkeley, Cal.
161. Ina Stratford, '09; Brigham, Utah.
162. Warren G. Swendsen, '04; Shaw Bldg., Boise, Idaho.
163. George F. Taylor, '00; 89 Whitmore Sq., Adelaide, Aus-
tralia.
164. Joseph E. Taylor, '05; 512 Vermont Bldg., Salt Lake
City.
165. Mrs. Olla Barker Thomas, '97; 51 So. 27 St., Ogden,
Utah.
166. Joseph R. Thompson, '96; Richmond, Utah.
167. George M. Turpin, '09; U. A. C., Logan, Utah.
168. John Henry Tuttle, '05; 1123 Boston Bldg., Salt Lake
City.
169. Mrs. Rachel Maughan Wadsworth, '97; Shelley, Idaho.
170. William L. Walker, '08; U. A. C., Logan, Utah.
171. Cadmus Wallace, '09; Smithfield, Utah.

172. Edward H. Walters, '09; 2201 Ellsworth Ave., Berkeley, California.
173. Mrs. Ethel Bullen Webb, '99; Richmond, Utah.
174. Franklin L. West, '04; 818 E. 57 St., Chicago, Ill.
175. Ray Benedict West, '04; 10 E. 26 N., Portland, Ore.
176. Osborne J. P. Widtsoe, '97; 275 N. Main, Salt Lake City.
177. Mrs. Rose Homer Widtsoe, '00; 275 N. Main, Salt Lake City.
178. Franklin A. Wyatt, '10; Wellsville, Utah.
179. Mrs. Mabel Bullen Young, '98; 229 E. Wesley, Wheaton, Illinois.

SCHOLARSHIP.

That the U. A. C. Alumni respect and admire scholarly attainments is demonstrated by the following tables. The first gives a list of those members who have, in the past, attended other schools; the second presents the names of those now in attendance as students elsewhere; and the third gives the list of colleges and universities in which U. A. C. graduates have been, or are now, enrolled. The sum total represents a very creditable proportion of our entire membership. The aggregate of time and wealth, spent by these devotees of scholarship in the pursuit of higher learning, is quite incalculable. They have established a most excellent precedent, and have set an example worthy of emulation by the future hosts who will become enrolled year by year in the U. A. C. Alumni Association. The College, the Faculty, the Board of Trustees, the entire State,—all have just reasons to regard with pride this sacrifice, on the part of the Alumni, of immediate financial reimbursement to sound and exhaustive scholarship.

I.

U. A. C. Alumni with Degrees from other Schools.

John T. Caine, III, '03; M. S. A., State College of Iowa, 1905.
 Blanche Cooper, '01; B. S., Columbia University, 1905.
 Grace Fisher, '03; B. S., Columbia University, 1908.
 Ray Homer Fisher, '04; M. D., University of Colorado, 1909.
 Burton P. Fleming, '00; M. E., Cornell University, 1906. Was a student at Harvard, 1900-1901.
 Charles Elliot Fleming, '09; B. S., Cornell University, 1910.
 Joseph E. Greaves, '04; M. S., University of Illinois, 1908.

James C. Hogenson, '99; M. S. A., Cornell University, 1906.
Was a student at the Michigan Agricultural College, 1902-1903.

William H. Homer, Jr., '00; M. S. A., Cornell University, 1906.

Alexander Ray Irvine, '98; M. D., Medico-Chirurgical College, Philadelphia, 1906.

Christian N. Jensen, '08; M. S. A., Cornell University, 1909.

Joseph W. Jensen, '00; S. B., Harvard University, 1901.

Christian Larsen, '96; A. M., Harvard University, 1906.

Ambrose P. Merrill, '03; B. S. in Civil Engineering, University of Utah, 1904. M. S. in Civil Engineering, University of Michigan, 1907.

Amos N. Merrill, '96; M. S., University of Illinois, 1908.

Aquilla C. Nebeker, '03; E. M., Columbia University, 1906.

Elmer George Peterson, '04; A. M., Cornell University, 1909.

Charles Walter Porter, '05; A. M., Harvard University, 1909.

Inez Powell, '07; B. S., Columbia University, 1909.

Benjamin F. Riter, Jr., '07; LL. B., Columbia University, 1910.

Was a student at Cornell, 1907-08.

John Stewart, '97; B. S., University of California, 1903.

Robert, Stewart, '02; Ph. D., University of Illinois, 1909. Was a student at Chicago University, 1904-05.

Arthur P. Stover, '99; M. S., University of California, 1905.

George F. Taylor, '00; S. B., Harvard University, 1904.

Mattie E. Stover, '01; B. S., University of California, 1905.

Franklin L. West, '04; M. S., Chicago University, 1910.

Ray West, '04; B. S., Cornell University, 1906.

Osborne J. P. Widtsoe, '97; A. M., Harvard University, 1905.

Many other members of the Alumni Association have studied, for shorter or longer periods, at various colleges and universities, without completing work leading to a degree: At Columbia, Mrs. Amanda H. Santschi, '02, Blanche Caine, '05, and Elizabeth C. Maughan, '00; at Chicago, J. T. Caine, '94, Wm. Peterson, '99, W. S. Langton, '96, J. T. Jardine, '05, Fred Merrill, '99, and Mrs. Amanda H. Santschi, '02; at the State College of Iowa, of Agriculture, L. A. Merrill, '95, and Fred Merrill, '99; at the Michigan Agricultural College, Jos. W. Nelson, '00, and at the University of Nebraska, Charles A. Jensen, '97. If we add to these the list of Alumni at present attending Eastern and Western institutions of learning, we have, after

making allowance for duplication of names in the two lists, a grand total of 52, not far from one-third of our entire membership, who have sacrificed time and means in the pursuit of greater scholarship. Of these, thirty have already secured degrees from other schools, and the majority of those at present pursuing advanced courses will return with the following degrees: a bachelor's, a master's, or a doctor's degree. It is also worth remarking that a very large number of our graduates many of whom do not appear in the preceding list, have in the past taken post-graduate work at their Alma Mater, while employed there as instructor or assistant, or while residing in Logan.

Of late years the U. A. C. Alumni Association has been represented every year by a considerable number of students, usually about a dozen, scattered throughout the best colleges and universities of the Union. This year the number is greatly increased. Nearly a score of the Alumni are specializing in various fields of work. The following is the complete list of those doing graduate work.

II.

U. A. C. Alumni in Attendance at Various Colleges and Universities.—1910-1911.

- Alfred E. Aldous, '10, (Forestry), University of Minnesota.
 Asa Bullen, '10, (Law), Harvard University.
 Ernest Carroll, '09, (Animal Nutrition), University of Illinois.
 Robert J. Evans, '09, (Horticulture), Cornell University.
 Charles E. Fleming, '09, (Forestry), University of Minnesota.
 Leon Fannesbeck, '09, (Law), Chicago University.
 Joseph E. Greaves, '04, (Chemistry), University of California.
 George R. Hill, '08, (Horticulture), Cornell University.
 A. Ray Irvine, '98, (Medicine), Vienna, Austria.
 Eunice E. Jacobson, '08, (English), University of Chicago.
 Nephi C. Jensen, '08, (Horticulture), Cornell University.
 Willard S. Langton, '96, (Mathematics), Columbia University.
 Orson G. Lloyd, '10, (Agricultural Economics), University of Wisconsin.
 Inez Maughan, '10, Utah Agricultural College.
 Melvin C. Merrill, '05, (Horticulture), Cornell University.
 W. Corlett Riter, '10, University of Utah.

Edward H. Walters, '09, (Chemistry), University of California.

Franklin L. West, '04, (Physics), University of Chicago.

Of these eighteen, several men, notably Greaves, '04, Carroll, '09, Hill, '08, Jensen, '08, Merrill, '05, and West, '04, are in direct line for the degree of Ph. D. It should be particularly noted that Elmer George Peterson, '04, now professor of Bacteriology at the Oregon Agricultural College has all the required work for the Ph. D. finished at Cornell. He will receive the degree at the next Commencement.

III.

Universities Attended.

Chicago University	9
Cornell University	10
Columbia University	7
Harvard University	7
Iowa State College.....	3
Leland Stanford Jr. University.....	1
Medico-Chirurgical College	1
Michigan Agricultural College.....	2
Ohio State University.....	1
University of California.....	1
University of Colorado.....	1
University of Illinois.....	3
University of Michigan.....	1
University of Minnesota.....	2
University of Nebraska.....	1
University of Utah.....	2
University of Wisconsin.....	1
<hr/>	
Grand Total	60
Names repeated	18
<hr/>	
Total	52

TEACHING.

The following list of Alumni at present engaged in the ancient and honorable vocation by no means represents the sum total of the support which our Association in the course of its

existence has rendered to this profession. At least 60 other members now engaged in other pursuits have taught, for periods of varying lengths, in schools, high schools and colleges. This service, taken collectively, must undoubtedly be looked upon as the greatest work performed by the Association. Through it thousands of minds have been stimulated.

*Alumni who are Members of College and University Faculties,
or of Experiment Station Staffs.*

Alando B. Ballantyne, '10, Utah Experiment Station, Logan.

John T. Caine, Jr., '94, Registrar, U. A. C., Logan.

John T. Caine, III., '04, Professor of Animal Husbandry, U. A. C.

John L. Coburn, '05, Financial Secretary, U. A. C.

Blanche Cooper, '01, Associate Prof. Home Economics, U. A. C.

Florence I. Dudley, '10, Instructor in Dom. Science, U. A. C.

Francis David Farrell, '07, Director Southern Exp. Station, Idaho.

Burton P. Fleming, '00, Professor of Mechanical Engineering, University of Iowa, Iowa City, Iowa.

Joseph E. Greaves, '04, Assistant Prof. Agricultural Chemistry, U. A. C. On leave of absence.

Charles T. Hirst, '10, Asst. Chemist, Utah Exp. Station.

Ernest P. Hoff, '09, Instructor in Zoology, U. A. C.

James C. Hogenson, '99, Professor Agronomy, U. A. C.

William M. Jardine, '04, Professor of Agronomy, Kansas Agricultural College, Manhattan, Kansas.

Christian N. Jensen, '08, Research Fellow in Plant Pathology, Cornell University.

Joseph W. Jensen, '00, Professor of Irrigation Engineering, U. A. C.

Willard S. Langton, '96, Professor of Mathematics, U. A. C.

Christian Larsen, '96, Professor of English, U. A. C.

Alexander M. McOmie, '10, Asst. Supt. Extension Dept., U. of Arizona.

Amelia Manning, '10, Instructor in English, U. A. C.

Amos N. Merrill, '96, Professor of Agriculture, B. Y. U., Provo.

Lewis A. Merrill, '95, Supervisor of Dry Farms and Extension Department, U. A. C.

Elmer George Peterson, '04, Professor of Bacteriology, Oregon Agricultural College, Corvallis, Ore.

Erastus Peterson, '10, Instructor in Agronomy, U. A. C.

William Peterson, '99, Professor of Geology, U. A. C.

Charles W. Porter, '05, Asst. Professor of Chemistry, U. A. C.

Edward P. Pulley, '02, Instructor in Mechanic Arts, U. A. C.

Vincent A. Sadler, '10, Instructor in Zoology, U. A. C.

Arthur H. Saxer, '10, Instructor in Physics, U. A. C.

Mrs. May Maughan Snow, '03, Instructor in English, B. Y. U., Provo.

Robert Stewart, '02, Professor of Chemistry, U. A. C.

Mattie E. Stover, '01, Chemist in Calif. Agricultural Experiment Station, Berkeley, Calif.

George M. Turpin, '09, Asst. Professor of Poultry Husbandry, U. A. C.

William L. Walker, '08, Instructor in Mathematics, U. A. C.

Franklin L. West, '04, Professor of Physics, U. A. C. On leave of absence.

Educational Administration.

Hermoine S. Hart, '97, County Supt. of Instruction, Bear Lake County, Idaho.

Alumni Teaching in High Schools and Public Schools.

(All in Utah, unless otherwise stated).

Hugh R. Adams, '09, Public Schools, Mendon.

Rodney C. Allred, '10, Agriculture, High School, Nephi.

Helen L. Bartlett, '10, Domestic Science, High School, Salt Lake City.

Ethel Bennion, '10, Domestic Science, L. D. S., Salt Lake City.

Blanche E. Caine, '05, Domestic Science, High School, Salt Lake City.

Veda Dixon, '10, Domestic Science, etc., High School, Payson.

Eva Farr, '05, Domestic Science, High School, Ogden.

Grace Fisher, '03, Domestic Science, Stout Training School Menominee, Wis.

Alva Hansen, '08, Commerce, Weber Academy, Ogden.

Alfred A. Hart, '97, Public Schools, Bloomington, Idaho.

Mrs. Ella M. Hull, '05, Domestic Science, Oneida Academy, Preston, Idaho.

- Hans E. Jensen, '08, Commerce, Snow Academy, Ephraim.
 James L. Kearns, '07, Principal, High School, Park City.
 Joel J. Harris, '98, Public Schools, Ogden.
 Alice Kewley, '10, Domestic Science, High School, Nephi.
 Mrs. Mamie S. Larsen, '97, Public Schools, Dingle, Idaho.
 Amy J. Leigh, '10, Domestic Science, Ricks Academy.
 Lizzie O. McKay, '09, Home Economics, Weber Academy, Ogden.
 Fred Mathews, '07, Mathematics, etc., High School, Springville.
 Elizabeth C. Maughan, '00, Domestic Science, Fielding Academy, Paris, Idaho.
 Josephine F. Maughan, '03, High School, Shelley, Idaho.
 Fred W. Merrill, '09, Agriculture, Murdock Academy.
 William B. Oldham, '10, Agriculture, Ricks Academy, Rexburg, Idaho.
 Daniel L. Pack, '09, Agriculture, etc., High School, Spanish Fork.
 Susannah Perry, '10, Domestic Science, Snow Academy, Ephraim.
 Dean F. Peterson, '10, Public Schools, Scipio.
 Willard L. Peterson, '10, Commerce, High School, Nephi.
 Inez Powell, '07, Domestic Science, Branch Normal, Cedar.
 Aaron Rasmussen, '10, Commerce, Ricks Academy, Rexburg, Idaho.
 Winnifred Smith, '10, New Jersey Academy, Logan.
 Nora Sonne, '10, Domestic Science, High School, Rigby, Ida.
 James H. Stewart, '10, Public Schools, Richmond.
 Ina Stratford, '09, Domestic Science, High School, Brigham.
 Mrs. Rose Widtsoe, '00, Hygiene for Girls, L. D. S. High School, Salt Lake City.
 Osborne J. P. Widtsoe, '97, Principal L. D. S. High School, Salt Lake City.

Of the 25 Alumni at present on the U. A. C. Faculty Roll, on the Experiment Station Staff or otherwise connected with the College, no less than thirteen have studied at other colleges. Nine of them hold degrees from such distinguished institutions as Harvard, Columbia, Cornell, Iowa State College of Agriculture, University of Illinois, and the University of Chicago. The other alumni on the Faculty are chiefly instructors and assistants.

FARMING.

The criticism is sometimes heard that so few of the U. A. C. Alumni "return to the soil." When intended adversely, this is by no means a just stricture; for in a new region like the West, the technical information of the graduate can for some time yet to come be turned to far greater utility for mankind, than by going back to the paternal acres. The high schools and colleges are eagerly looking for teachers of agriculture, and here the trained mind comes in contact with and stimulates hundreds of young minds,—radiates scientific agriculture in a thousand directions. *To preach* agriculture is for the time being almost as essential as *to practice* it. Moreover, to get the best returns, investigations and research must be carried on by trained men, and, as a consequence of the inducements held out by the U. S. Government many of our best men have gone into Government Service. Finally, even if the criticism had any inherent value, it would be offset by the fact that thousands of young men attend the College and study agriculture for a shorter period,—one to four years—and leave without taking a degree. These thousands almost invariably "return to the soil" and prove a great factor in the agricultural improvement of many regions.

Practical Scientific Agriculture in its Various Branches.

Earl Bennion, '09, General farming; tendency to specialize in Horticulture. R. F. D., Murray, Utah.

John T. Caine, Jr., '94, and John T. Caine, III., '04, Owners and operators of the Ballamoor Farms, Richmond, Utah, noted for pure bred live-stock, in particular the Cache Villa Herd of registered Jerseys.

Stanley Crawford, '00, Owner and manager of the Crawford Poultry Farm, Manti, Utah, a large and eminently successful plant. The varieties bred are the S. C. and the R. C. White Leghorns, and the Silver Duckwing Leghorns.

William P. Day, '09, Practical Horticulture, Brigham, Utah.

Alfred A. Hart, '97, General Farming, Bloomington, Idaho. Also in the Public Schools.

Russell K. Homer, '08, Horticulture, especially apples. R. F. D., Provo, Utah.

Wm. H. Homer, Jr., '00, Horticulture, in particular apples.

- Pleasant Grove, Utah. The Timpanogos Fruit Farm.
- W. M. Jardine, '04, Part owner of large arid farm in eastern Montana; also part owner of a fruit and trucking farm in the Arkansas Valley, Colorado.
- Orville L. Lee, '10, General Farming, Hyde Park, Utah.
- Fred Mathews, '07, Owner and manager of farm near Salt Lake City. General farming, with a leaning to Horticulture.
- Fred W. Merrill, '99, Part owner of a fruit farm near Provo.
- Lewis A. Merrill, '95, Part owner of the Timpanogos Fruit Farm, Pleasant Grove, Utah.
- Lorin A. Merrill, '96, Owns and operates a farm near Logan, largely planted in apple trees.
- Samuel P. Morgan, '04, An engineer, but beginning to specialize in apples. Franklin, Idaho.
- Mary Almenda Perry, '01, Owner and manager of a ranch at Taft, near Vernal, Uintah County, Utah.
- Joseph H. Peterson, '99, General farming, Huntsville, Utah.
- P. G. Peterson, '07, Owns and manages a fruit farm on Provo Bench.
- Robert H. Stewart, '10, Farmington, Utah.
- J. E. Taylor, '05, Owns and manages a fruit farm near Salt Lake City. Also manages large orchard in the same locality.
- Joseph R. Thomson, '96, General Farming, Richmond, Utah. Taught in the public schools for a long series of years in addition to operating his farm. The latter now requires all his time.
- Cadmus Wallace, '09, Manager Cache Valley Orchard Co., Smithfield, Utah, a large and flourishing apple orchard.
- Franklin A. Wyatt, '10, General farming, Wellsville, Utah, but expects to enter Government Service.

One interesting tendency deserves notice: An increasing number of Alumni cherish the desire to retire to a country home, an ideal, model country estate, and as years go on, more and more of our members are investing their savings, gained in other fields in just such potential estates.

PRACTICAL HOME ECONOMICS.

This work is represented by a slowly growing number of ideal homes, each one presided over by one of the U. A. C.

Alumnae. They prove that their training has not been all theory,—quite the contrary. Home making, i. e., of this variety, cannot be too strongly encouraged by the Association.

Married Alumnae.

(For present whereabouts see the address list).

Mrs. Victoria Lundberg Anderson, '97.
 Mrs. Clara Foster Bacon, '97.
 Mrs. Nellie Hayball Bennion, '09.
 Mrs. Geneva Egbert Chase, '04.
 Mrs. Esther Evans Davis, '01.
 Mrs. Hazel Love Dunford, '05.
 Mrs. Edith Rudolph Hillman, '05.
 Mrs. Ella Maughan Hull, '05.
 Mrs. Minnie Peterson Isgreen, '06.
 Mrs. Mamie Smith Larsen, '97.
 Mrs. Martha Hoyt Myrick, '94.
 Mrs. Anna Beers Petty, '98.
 Mrs. Mildred Forgeon Rich, '06.
 Mrs. Amanda Holmgren Santschi, '02.
 Mrs. May Maughan Snow, '03.
 Mrs. Olla Barker Thomas, '97.
 Mrs. Rachel Maughan Wadsworth, '97.
 Mrs. Ethel Bullen Webb, '99.
 Mrs. Rose Homer Widtsoe, '00.
 Mrs. Mabel Bullen Young, '98.

The interesting thing about this group of twenty married ladies is the fact that with two exceptions they did not presume to enter the blissful state of Holy Matrimony until by giving a number of their best years to the labor of teaching, they had in some slight measure repaid their debt to the State and the Nation. They taught for varying periods, some but a year or two, others for eight or nine years. Only two were persuaded to omit this service,—not because they were not qualified nor because there was no demand for their services, but for weightier reasons.

Some of these alumnae were brilliantly successful in teaching domestic science. Among these should be mentioned Mrs. Widtsoe, who introduced this work and organized the department at the B. Y. C., Logan; Mrs. Isgreen, who organized the

department at the Snow Academy, Ephraim; Mrs. Hull, who organized the work in the Nephi High School and at the Oneida Academy, Preston, Idaho; and Mesdames Myrick, Dunford and Petty, who all gave excellent service in the Domestic Science Department at the U. A. C. Others were successful teachers of English, notably Mrs. Snow and Mrs. Santschi; and still others gave long years of faithful service to the public schools in different parts of Utah and adjacent states.

GOVERNMENT SERVICE.

One reason why so few of the U. A. C. Graduates have in the past devoted themselves to practical agriculture is the fact that they have been taken into the service of the Department of Agriculture and the Department of the Interior, in many cases immediately upon graduating, in all cases before they had time to acquire the capital necessary for a farm. This fact, coupled with the equally striking truth that every one who has entered this work has given solid satisfaction to the Government, is in a high degree flattering. They have established a presumption in favor of U. A. C. graduates which will operate and is now operating favorably for our younger and our future members whose ambition lies that way.

UNITED STATES DEPARTMENT OF AGRICULTURE.

Bureau of Plant Industry.

Philip Vincent Cardon, '09, has been in charge for about a year of the joint investigations carried on by the Bureau of Plant Industry and the Utah Experiment Station at the Nephi Experimental Farm. He is now in Washington, D. C., preparing a report from his notes.

Charles A. Jensen, '97, has been in the employ of the Department of Agriculture since 1900, part of the time in the Bureau of Soils. He has made extensive soil surveys in Washington, California, Arizona, Utah, Montana, and North Dakota. In the Bureau of Plant Industry his work has been in dry land agriculture, and he occupies a responsible position in the Department.

David Edmund Stephens, '04, has been with the Department and in this Bureau since 1908, and has been kept rather steadily at headquarters in Washington in the responsible

position of Executive Assistant. He has, however, enjoyed one or two inspection trips through the fields of investigation. Among the men formerly associated with the Bureau of Plant Industry must be mentioned two, Will Jardine and Dave Farrell.

William M. Jardine, '04, a graduate of the Course in Agriculture was with the U. S. Department of Agriculture from 1907 to 1910, and made an enviable record as assistant cerealist in charge of dry land grain investigations. He resigned in 1910 to accept the head professorship in Agronomy at the University of Kansas.

Francis D. Farrell, '07, a graduate of the course in general science, was also with the Bureau from 1907 to 1910, in charge of the co-operative experimental work at the Nephi Station. He resigned to accept the position of Assistant Director of the Idaho Experiment Stations, and now has charge of the southern stations with headquarters at Boise.

Bureau of Soils.

James W. Nelson, '00, is almost a veteran in the service, having been with the Bureau of Soils since January 1, 1903. For two years he worked under the direct supervision of Prof. F. H. King, the soil expert. He is at present Reconnaissance Surveyor for the Bureau.

Other alumni who were formerly in the Bureau of Soils are: Charles A. Jensen, '97, now with the Bureau of Soils; James C. Hogenson, '99, now Professor of Agronomy, A. C. U.

Forest Service.

James T. Jardine, '05, has for several years been in the Forest Service and has risen to a position of importance, being at present in charge of a series of extensive investigations in co-operation with the Bureau of Plant Industry for the purpose of increasing the quality and extent of the mountain and forest grazing. He travels all summer from one National Forest to another throughout the West.

Charles E. Fleming, '09, and Alfred E. Aldous, '10, have each been in the Forest Service but a short period, the former in Colorado and Wyoming, the latter in Utah. This winter the Department has granted

them both leave of absence, to attend the University of Minnesota, to take special work in plant ecology and botany, with Dr. Clements, the great authority in this field of natural science.

Thomas C. Callister, '03, was for a time employed in the Forest Service. See Engineering.

Bureau of Entomology.

John Raymond Horton, '09, is a graduate of the general science course, with his major work in Entomology. Immediately upon graduation he was drafted into the Government Service and has been with the Bureau of Entomology ever since. His time has been spent in investigating the citrus-fruit pests of California. He is at present stationed at Lindsay, California.

Office of Experiment Stations.

(a) Irrigation Investigations.

Walter W. McLaughlin, '96, with the Department since 1903, and in charge of the Federal Irrigation Investigations in the State since 1908; a responsible and interesting position. See Engineering.

Arthur P. Stover, '99, Civil Engineering, holding also the degree of M. S. in Civil Engineering from the University of California, has achieved the signal distinction of taking charge of the irrigation investigations in the State of Oregon. Headquarters, Portland, 207 Tilford Bldg.

John Henry Tuttle, '05, and John Stewart, '97, are employed by the Office of Irrigation Investigations in Utah to collect data and statistics about the use of irrigating water in the State.

(b) Drainage Investigations.

Charles F. Brown, '03, has been with the Department since 1905. At present he is in charge of the government Drainage Investigations in Utah, Colorado, and Wyoming, an extremely responsible position. See Engineering.

UNITED STATES DEPARTMENT OF THE INTERIOR.

(a) Reclamation Service.

Andrew B. Larsen, '94.

Frederick D. Pyle, '03.

For an incomplete account of the vast projects engineered by these alumni, see the section entitled Engineering; for a detailed account see The U. A. C. Graduate, Vol. I. Other alumni who in the past have done valiant work for the Reclamation Service are:

William D. Beers, '99.

Richard S. Ballantyne, '05.

Thomas C. Callister, '03.

Thomas H. Humphreys, '97.

Josiah L. Rhead, '96.

Warren G. Swendsen, '04.

The work done by each of these men is given brief mention in the section on Engineering,

(b) Bureau of Lands.

Irvin Allred, '06, has been with the Bureau of Lands, Manila, P. I., since 1906. For further account, see Engineering.

(c) Indian Service.

Julius Hall Jacobson, '09, Farm Supervisor, Indian Agency, Mescalero, New Mexico. Mr. Jacobson has been in this position something less than a year, but reports indicate that he likes it and is quite master of the situation.

ENGINEERING.

From its inception until the year 1905 the U. A. C. offered degree courses in engineering. The first men graduated from this work were A. B. Larsen, '94, and W. B. Dougall, '94; the last, Heber Carver, '08, and Ellis Hudman, '08. The following list of our graduates in engineering shows in a striking manner, the great success of all our engineering alumni. Especially notable is the success of our younger graduates from the course in irrigation and drainage.

Irwin Allred, '06, Civil Engineering, has been in the employ of

the Bureau of Lands, Philippine Islands, since 1906. He is chief of a surveying party, engaged in making surveys of the Spanish friar lands, and setting up monuments to serve as guide posts for all future surveys.

Richard Stewart Ballantyne, '05, a graduate of the course in civil engineering, has had a varied career in all kinds of engineering work: U. S. Reclamation Service, draughting, mining engineering, reservoir construction, Salt Lake City Engineering Department. At present he is Head Draughtsman of the Engineering Department of the D. & R. G. R. R. Co., Salt Lake City.

Charles Elmer Barrett, 10, Reservoir Construction at Stone, Idaho. A graduate of the course in irrigation and drainage.

William D. Beers, '99, a graduate of the course in Civil Engineering for a series of years in the employ of the U. S. Reclamation Service working on extensive projects in the Strawberry Valley, is now with the engineering firm of J. C. White and Co., Northport, Washington.

Charles Franklin Brown, 03, a graduate of the course in Civil Engineering, has distinguished himself in his profession. At first, after graduation he was Asst. Civil Engineer for the Utah Sugar Co., at Garland. Since 1905 he has been Drainage Engineer for the U. S. Department of Agriculture, and he is at present in charge of the U. S. Drainage Investigations in Utah, Colorado, and Wyoming. He has three assistant engineers.

Thomas Clark Callister, '03, a graduate of the course in Civil Engineering, has been successively with the U. S. Reclamation Service, the Los Angeles and Salt Lake R. R. Co., and with the U. S. Forest Service. He is now, and has been for several years, giving all his time to private work, with headquarters at Fillmore.

Heber Carver, '08, has been engaged in engineering work in a number of places. At present he has an engineering office in Brigham, Utah. He is a graduate of the course in Mechanical Engineering, and is a member of the last class in that branch graduated by the U. A. C.

Stanley Crawford, '00, a graduate in Mechanical Engineering, has done a great deal of work, e. g., installing electric light and power plants, telephone lines, etc. He has an office as as electrical engineer at Manti.

- Burton P. Fleming, '00, a graduate in Civil Engineering, did a great deal of active engineering field-work, but in recent years has devoted himself to teaching the subject. On account of this phase of his work it is given under Teaching.
- Robert J. Gordon, '99, Civil Engineering, has been eminently successful as an engineer in the Dominion of Canada. Passing the stringent Government Examinations, he was appointed District Surveyor and Engineer for Southern Alberta, a position which he still holds.
- Ellis Hudman, '08, Mechanical Engineering, was for two years with the Telluride Light and Power Co., but is now with a private firm in Wyoming. He did work at French Creek and Encampment, and is at present at Evanston.
- Thomas H. Humphreys, '97, Civil Engineering, is at present engaged in private engineering work, with offices at Logan. He is at present County Surveyor, and also Consulting Engineer for several irrigation companies. From 1903 to 1908 he was in the employ of the U. S. Reclamation Service engaged on very extensive projects in California.
- Joseph W. Jenson, '00, Civil Engineer, has done a great deal of field work, although he has been engaged in teaching ever since leaving Harvard. He is at present a member of the State Road Commission.
- Andrew B. Larsen, '94, holds the degree of B. C. E. (Bachelor of Civil Engineering) and is, since Mr. Dougall's death, the oldest engineering alumnus. He engaged in surveying and railroad engineering, but since 1905 he has been in the U. S. Reclamation Service, with headquarters at Provo.
- Walter W. McLaughlin, '96, Civil Engineering, has been for two years with the U. S. Department of Agriculture, as chief of the irrigation investigations in the State of Utah. Before that time he did mining engineering and was connected with the U. A. C. as Professor of Irrigation and Drainage, and a member of the Station Staff.
- Ambrose P. Merrill, '03, Civil Engineering, is also a graduate of the U. of U. in the same line of work. He worked for the Salt Lake City Engineering Department and for various private engineering firms. At present he is with the Knight Investment Co., of Provo, Utah.
- Frank Moench, '07, Civil Engineering, has been for several years at American Falls, Idaho, where he has held various city appointments, and has offices as civil engineer.

Samuel P. Morgan, '04, Civil Engineering, has been engaged in private and public engineering ever since graduation. He has had charge of several surveys and irrigation projects. Headquarters, Franklin, Idaho.

Aquilla C. Nebeker, '03, Civil Engineering (Later at Columbia; Mining Engineering) has been with various mining and smelting companies in Utah and Nevada. In 1910 he accepted a position with the War Department in the Philippines, to supervise irrigation projects. He resigned, however, and is now in the Philippines engaged in mining engineering.

Eugenio S. Pierce, '05, Mechanical Engineering, has been chiefly engaged in electrical engineering since graduating. Is at present with the engineering firm of Swendson and Swendsen, Shaw Bldg., Boise, Idaho.

Frederick D. Pyle, '03, Civil Engineering, has been with the U. S. Reclamation Service since 1904. All this time has been spent at the North Platte project, Mitchell, Nebraska, where he is still engaged as one of the chief engineers.

Josiah L. Rhead, '96, Civil Engineering, was until 1902 with various private companies. Until 1909, he was with the U. S. Reclamation Service, engaged on huge projects in California. At present he is at Coalville, Utah.

Charles B. Smith, '01, Civil Engineering, was for a number of years with the U. S. Reclamation Service in charge of work near Boise. Later he began private engineering enterprises in which he has been very successful. Is at present at Twin Falls, Idaho.

James H. Smith, '05, Civil Engineering, was engaged in practical engineering in various parts of Idaho until 1909, when he went to Spokane, Washington, where he is now with the City Engineering Department.

Arthur P. Stover, '99, Civil Engineering, has been with the U. S. Department of Agriculture, Irrigation Investigations ever since 1899, except while at the University of California. Is in charge of the irrigation investigations for the State of Oregon, with headquarters at Portland.

Warren G. Swendsen, '04, Civil Engineering, was for a time with the U. S. Reclamation Service and then with the Tel-luride Light and Power Company. He is now a member of the engineering firm of Swendsen and Swendsen, with offices in the Shaw Bldg., Boise, Idaho.

George F. Taylor, '00, Civil Engineering, a graduate of Harvard, was employed for two years by the Massachusetts State Board of Health, and then by the State Engineer of Utah. He was engaged in hydragraphic surveys. At present he is observing irrigation conditions in Australia.

John Henry Tuttle, '05, Civil Engineering, has been actively engaged in all sorts of engineering work ever since graduating. At present he is in the employ of the U. S. Department of Agriculture, Irrigation Investigations.

Ray B. West, '04, Civil Engineering, was for a number of years engaged in railroad construction work both in Utah and Oregon. For a short time he taught engineering at the B. Y. C., Logan, but at present he has offices as civil engineer at Portland, Oregon.

COMMERCIAL OCCUPATIONS.

All Branches.

Frederick H. Atkinson, '98, Auditor, Sumpter Valley R. R. Co., Baker City, Oregon.

John H. Bankhead, '97, Asst. Cashier, Thatcher Bros. Banking Co., Logan, Utah.

James E. Barrack, '05, Manager, Alaska Machinery Co., Fairbanks, Alaska.

Edmund Crawford, '04, Cashier Emery County Bank, Castle Dale, Utah.

Will Fred Culmer, '95, Manager, Culmer Glass and Paint Co., Salt Lake City, Utah.

Robert W. Erwin, '94, Manager, Missouri Iron Co., St. Louis, Missouri.

John J. Frederickson, '05, Manager, Owen Mdse. Co., Malad, Idaho. Also in Real Estate.

Joseph Grue, '10, Real Estate Orchard Lands, Farmington, Utah.

Joel J. Harris, '98, Merchandise, Ogden, Utah. Also in the Public Schools.

Charles A. McCausland, '05, With the Cache Valley Banking Co., Logan, Utah.

Aaron B. Olsen, '07, Bookkeeping, Anderson & Sons Co., Logan, Utah.

James D. Pence, '10, Manager, Wilkins Live Stock Company, Mountain Home, Idaho.

Preston G. Peterson, '07, Secretary, Iron King Consolidated Mining Company, Provo.

Charles Pond, '97, Merchandise, Lewiston, Utah.

Samuel Grover Rich, '05, Cashier, Burley National Bank, Burley, Idaho.

Roy Rudolph, '05, With the Co-operative Drug Co., Logan, Utah. Part Owner.

Joseph E. Shepard, '94, Cashier, Cache Valley Banking Company, Logan, Utah.

Walter W. Simmonds, '99, Merchandise, Salmon City, Idaho.

MISCELLANEOUS.

Medicine.

Ray H. Fisher, '04, M. D., Oxford, Idaho.

Alexander Ray Irvine, '98, M. D., Salt Lake City, Utah. At present studying in Europe.

Law.

Benjamin F. Riter, '07, LL. B., Portland, Oregon.

The Army.

Eugene Santschi, '08, Fort Douglas, Utah.

Editor.

Lewis A. Merrill, '95, Editor Deseret Farmer, 512 Vermont Bldg., Salt Lake City.

State Employment.

Joseph Edward Taylor, '05, State Horticultural Inspector, 512 Vermont Bldg., Salt Lake City, Utah.

Biennial Report of the Secretary

For the Biennium Ending Nov. 30, 1910.

LOGAN, UTAH, DEC. 10, 1910.

*To the Board of Trustees of the
Agricultural College of Utah:*

LADIES AND GENTLEMEN:—I beg to submit the following report. It is made up of the following items.

- I. A Report of Receipts and Expenditures.
- II. An Inventory of all College Property.
- III. A Report of the College Fire Insurance.
- IV. A Financial Report on The Student Body Organization for one year ending June 30, 1910.

I.

Biennial Report of Receipts and Expenditures.

THE COLLEGE.

Receipts.

Balance with Treasurer Nov. 30, 1908.....	\$ 17,393.22
Cash on hand (including Revolving Fund, \$500.00)	843.64
From Federal Government (Morrill & Nelson Funds)	85,000.00
From State Appropriations.....	164,310.57
From State Power Plant Deficit.....	300.00
From Interest on Land Grant Fund.....	15,908.24
Fees from Students.....	15,343.80
Sales of Products.....	14,061.93
Sale of old Dormitory Equipment.....	305.50
U. F. W. C. Scholarships	10.00
Receipts from Bookstore during Biennium.....	11,477.27
Receipts from Creamery during Biennium.....	20,483.39
Receipts from State Board Horse Commissioners..	224.50
Total	<hr/> \$345,662.06

Expenditures.

General maintenance	\$224,588.08
Salaries	\$142,452.24
From Gov. Fund.	\$78,347.18
From State Fund	64,105.06
Pay Rolls	11,773.53
Supplies	23,752.28
Fuel	8,395.16
Insurance	1,948.70
Light and power.....	5,151.07
Telephone and Telegraph.....	1,281.80
Postage and stationery.....	1,456.49
Printing and advertising.....	11,227.62
Repairs (plant and equipment) ..	10,672.91
Traveling expenses	2,196.27
Water tax	261.42
Unclassified expense	4,018.59
<hr/>	
General Equipment	20,789.57
Furniture	4,554.49
Machinery and implemnets.....	1,002.60
Scientific apparatus	4,044.54
Books, maps, etc.	2,864.13
Live stock	6,194.13
Unclassified	2,129.68
<hr/>	
New woman's building equipment..	35,835.97
Building	30,701.72
Equipment for same	5,134.25
<hr/>	
Buildings and improvements.....	9,237.70
Stock judging pavilion.....	5,303.44
New incubator cellar.....	368.92
Main building	81.29
Residences	1,948.99
Campus and water works.....	795.68
Shops and barns.....	225.42
Light, heat and power plants....	513.96
<hr/>	

Exhibits at State Fairs.....	1,293.95
New power plant.....	185.60
Bookstore purchases during biennium.....	10,283.12
Creamery purchases during biennium.....	20,076.81
State Board Horse Commissioners.....	433.69
Balance	22,937.57
In hands of treasurer	20,036.00
State fund overdraft 6,359.05	
Gov. fund balance 26,394.65	
Revolving fund with treasurer...	1,000.00
Cash on hand.....	1,901.57
Total	\$345,662.06

FARMERS' INSTITUTE.

Receipts.

From State appropriation.....	10,000.00
From fees from schools held.....	611.95
Total	\$ 10,611.95

Expenditures.

Overdraft Nov. 30, 1908.....	84.47
Traveling expenses	2,763.53
Printing	1,951.91
Equipment	1,077.65
Supplies and incidental expense.....	402.81
Salaries and labor.....	4,097.19
Balance (wtih treasurer).....	234.39
Total	\$ 10,611.95

THE ARID FARMS.

Receipts.

From State appropriation.....	9,470.41
From farm sales.....	482.28
Overdraft treasurer (due from State).....	275.27
Total	\$ 10,227.96

Expenditures.

Overdraft Nov. 30, 1908.....	485.35
Salaries	4,130.65
Labor	3,444.67
Publications	19.69
Postage and stationery.....	63.94
Chemical supplies	21.88
Seeds, Plants and Sundry supplies.....	329.85
Photographic supplies	15.60
Tools, implements and machinery.....	173.83
Scientific apparatus	72.22
Traveling expenses	644.60
Buildings and land	656.60
Freight and express.....	91.45
Equipment, desks, etc.	50.63
Contingent expenses	27.00
Total	<hr/> \$ 10,227.96

IRRIGATION AND DRAINAGE INVESTIGATIONS.

Receipts.

From State appropriation.....	8,146.33
Overdraft on treasurer (due from State).....	689.90
Total	<hr/> \$ 8,836.23

Expenditures.

Overdraft on treasurer Nov. 30, 1908.....	1,839.54
Salaries	3,930.78
Labor	1,610.83
Seeds, plants and sundry supplies.....	166.47
Tools, implements and machinery	5.00
Scientific apparatus	5.84
Traveling expenses	1,214.47
Flumes and Weirs	63.30
Total	<hr/> \$ 8,836.23

SOUTHERN UTAH EXPERIMENT FARM.

Receipts.

From State appropriation.....	10,461.00
From farm sales.....	233.17
Total	<u>\$ 10,694.17</u>

Expenditures.

Overdraft on treasurer Nov. 30, 1908	4,708.44
Salaries	5,005.52
Labor	103.00
Printing	3.75
Postage and Stationery.....	116.26
Seeds, plants and sundry supplies..	317.76
Water tax	38.80
Feeding stuff	37.50
Tools, implements and machinery..	39.75
Traveling expenses	180.40
Buildings and land	64.85
Freight and express.....	52.69
Balance with treasurer, (including Rev. Fund)	25.45
Total	<u>\$ 10,694.17</u>

CENTRAL UTAH EXPERIMENT STATION.

Receipts.

From State appropriation.....	7,000.00
From farm sales.....	1,298.67
Overdraft Nov. 30, 1910.....	540.28
Total	<u>\$ 8,838.95</u>

Expenditures.

Overdraft Nov. 30, 1910.....	7,182.02	
Salaries	989.07	
Labor	391.07	
Postage and stationery.....	6.80	
Seeds, plants and sundry supplies..	56.70	
Tools, implements and machinery..	16.95	
Traveling expenses	54.35	
Freight and express . . . . .	.50	
Building and repairs.....	.40	
Contingent expenses	141.09	
	<hr/>	
Total	\$	8,838.95

EXPERIMENT STATION.

(Hatch, Adams, and Miscellaneous Funds).

Receipts.

Balance on hand Nov.		
30, 1908	664.09	
Received from U. S.		
Government	56,000.00	
Hatch Fund	30,000.00	
Adams Fund	26,000.00	
	<hr/>	
Miscellaneous	8,164.39	
From U. S. Govern-		
ment (Co-operative		
work)	300.00	
Sales, etc.	7,856.89	
Old warrant can-		
celled	7.50	
Total		64,828.48

Expenditures.

Salaries	30,820.87	
Labor	13,789.68	
Publications	434.16	
Postage and stationery	1,050.00	
Freight and express	93.96	
Heat, light and water	736.77	
Chemical supplies	1,356.11	
Seeds, plants and sundry supplies	1,449.38	
Fertilizers (including water tax)	281.19	
Feeding stuffs	4,205.04	
Library	299.98	
Tools, implements and machinery	1,571.55	
Furniture and fixtures	366.80	
Scientific apparatus	1,364.45	
Live stock	3,255.01	
Traveling expenses	2,549.14	
Buildings and land	803.57	
Contingent expenses	371.75	
Balance with treasurer	29.07	
	<hr/>	
Total		64,828.48

RECAPITULATION.

Summary of Receipts.

*The College (total)	345,662.06	
Farmers' Institute Fund	10,611.95	
The Arid Farms	9,952.69	
Irrigation and Drainage investigations	8,146.33	
Southern Utah Experiment Station	10,694.17	
Central Utah Experiment Station	8,298.67	
Experiment Station	64,828.48	
	<hr/>	
Total		458,194.35

Summary of Expenditures.

*The College (total)	322,724.69	
Farmers' Institute Fund.....	10,377.56	
The arid farms.....	10,227.96	
Irrigation and drainage investigation	8,836.23	
Southern Utah Experiment Station	10,668.72	
Central Utah Experiment Station..	8,838.95	
Experiment station	64,799.41	
Net balance with treasurer (including cash on hand).....	21,720.83	
	<hr/>	
Total		458,194.35

*Note:—In the above report the Total (not net) Receipts and Disbursements have been given in all cases. In the case of Bookstore, Creamy, etc., only the net receipts should be considered as they are run on a commercial basis.

I hereby certify that the above is a true and correct statement of the receipts and disbursements of the Board of Trustees of the Utah Agricultural College for the Biennium ending November 30, 1910.

JOHN L. COBURN,
Secretary.

II.

INVENTORIES.

(Not including supplies and land grant.)

November 30, 1910.

I. The College:

Land 121 acres at \$200.00 per acre.....	\$ 23,200.00
Buildings (including fixed equipment, water works, sewerage system and heating plant...)	325,200.00
Administration	\$ 3,550.82
President's office .	\$ 2,440.35
Secretary's office .	746.10
Registrar's office .	364.37
	<hr/>

Departments of In- struction		87,384.38
Agronomy	2,033.60	
Animal Husbandry	7,730.87	
Art	827.05	
Bacteriology	346.62	
Chemistry	3,440.53	
Commerce	3,688.00	
Dairy	2,487.55	
Domestic Science and Arts	7,488.19	
Engineering and Mechanic Arts.	33,078.44	
English	405.50	
Geology and Min- erology	781.10	
History and Civics	52.00	
Horticulture and Botany	9,177.75	
Mathematics and Astronomy	561.00	
Military Science.. . . .	68.08	
Modern Languages	13.30	
Music	3,055.00	
Photography	168.10	
Physics	2,864.05	
Physical Education	2,716.05	
Veterinary Science	777.20	
Zoology and En- tomology	5,623.60	
Miscellaneous equip- ment		26,197.28
Furniture, etc., in assembly room, class rooms, so- ciety rooms and halls, etc.	4,498.75	
Library, including books and peri- odicals	19,898.58	
Bookstore equip-		

ment	114.00
Janitorial	67.15
Construction and repairs	1,368.80
Cafeteria	250.00

Total College equipment 117,132.48

II. Experiment Station:

Offices, reading room,
etc. 2,337.35

Departments 19,118.15

Agronomy	3,301.55
Animal Husbandry	4,513.45
Chemistry	5,825.70
Horticulture	776.95
Irrigation	241.10
Poultry	3,142.40
Zoology and En- tomology	867.60
Veterinary Science	333.00
Photography	116.40

Total Experiment Station equipment 21,455.50

III. Arid farms, build-
ings equipment.. 2,800.00

IV. Farmers' Institute. 1,500.00

V. Southern Utah Ex-
periment Farm.. 9,531.00

Grand Total \$501,818.98

The above inventories were hurriedly compiled from the inventories as handed in, in the rough. They will be checked carefully, corrected and permanently filed in the Secretary's Office.

III.

SECRETARY'S REPORT ON THE CONDITION OF
THE FIRE INSURANCE CARRIED BY THE COLLEGE.

Nov. 30, 1910.

During the past year we have gone over and entirely re-adjusted our Fire Insurance. The Total amount of Fire Insurance carried on the plant at Logan has been raised to \$260,000.00 and segregated as follows:

Main Building and Contents.....	\$148,000.00
Experiment Station and Contents.....	7,000.00
Woman's Building and Contents.....	32,000.00
Mechanic Arts Building and Contents.....	32,000.00
Transformer House and Contents.....	1,000.00
Poultry House and Contents.....	5,000.00
Horse Barn and Contents.....	6,000.00
Tie Shed and Contents.....	1,500.00
Cattle Barn and Contents.....	7,600.00
Sheep Barn and Contents.....	3,300.00
President's Residence	2,700.00
Director's Residence	2,000.00
Agronomist's Residence	1,600.00
Three Employees' Cottages.....	1,200.00
Green House and Contents.....	3,200.00
Piggery	1,000.00
Veterinary Hospital and Contents.....	900.00
Stock Judging Pavilion.....	4,000.00
Total	<u>\$260,000.00</u>

The above Insurance is covered by a Blanket Policy. We carry Insurance in addition to this as follows:

Buildings at St. George.....	\$ 2,100.00
Ordnance Stores belonging to the U.S. Government	6,716.15
Steam Boilers (Boiler House and Woman's Building)	25,000.00
Elevator at Woman's Building.....	5,000.00

Total all Insurance carried.....\$298,816.15

This is divided among the various companies as follows:

The Home Fire of Utah.....	\$ 54,100.00
National Union of Pittsburg.....	25,000.00
Hartford Steam Boiler.....	25,000.00
Germania of New York.....	19,500.00
Milwaukee Mechanics of Milwaukee.....	19,200.00
Northern National of Milwaukee.....	15,000.00
German Fire of Peoria, Illinois.....	12,000.00
Law Union and Rock, San Francisco.....	10,000.00
Home Insurance Company of New York.....	6,248.15
Dixie Insurance Company, Greensboro, N. C. ...	6,000.00
The Northern Assurance Company of London....	6,500.00
Svea Insurance Company of Gottenburg, Sweden.	5,000.00
Commonwealth Fire Insurance of Texas.....	5,500.00
Aetna Insurance Company, Hartford, Conn.	5,000.00
Calumet Insurance Company of Chicago.....	5,000.00
Prussian National Insurance Company, Stettin, Germany	5,000.00
Hartford Fire Insurance Company, Hartford, Conn.	5,000.00
English American Underwriters, Liverpool.....	5,000.00
Maryland Casualty Company, Baltimore, Md. ...	5,000.00
Sun Insurance Office, San Francisco.....	4,468.00
Globe and Rutgers Insurance Company of New York	4,250.00
Dutchess of Poughkeepsie, New York.....	4,000.00
German American Insurance Company, New York	4,000.00
Security Insurance Company, New Haven, Conn.	4,000.00
St. Paul Fire and Marine of St. Paul.....	4,000.00
Phenix Insurance Company of Brooklyn.....	3,000.00
West Chester Fire Insurance Company of New York	4,000.00
North State Fire Insurance Company, Greenboro, N. C.	2,900.00
Palatine Fire Insurance Company of London.....	2,900.00
Firemans Fund Insurance Company of San Fran- cisco	2,500.00
American Central Insurance Company of St. Louis	2,500.00
Farmers and Mechanics Insurance Company of Lincoln, Nebraska	2,000.00
Seattle Fire and Marine Insurance Company of Seattle	2,000.00

Glenns' Falls Insurance Company, New York	2,000.00
Stuyvesant Fire Insurance Company	2,000.00
International Fire Insurance Company, Fort Worth, Texas	2,000.00
Queen Insurance Company of New York	2,000.00
American Insurance Company of Newark, N. J . . .	2,000.00
Northwestern Mutual Insurance Company, Seattle	2,000.00
Southern National Insurance Company, Austin, Texas	1,250.00
Total	<u>\$298,816.15</u>

IV.

FINANCIAL REPORT OF THE U. A. C. STUDENT
BODY ORGANIZATION FOR ONE YEAR,
ENDING JUNE 30, 1910.

	Gain	Cost
Overdraft Sept. 1, 1909		\$262.56
Fees	\$3,602.00	
Received	\$3,685.50	
Students	\$3,560.50	
Faculty	125.00	
Refunded	83.50	
Foot Ball		12.10
Receipts	1,001.30	
Paid out	1,013.40	
Student Body dances		159.50
Receipts	66.00	
Paid out	225.50	
Student Life		510.68
Receipts	682.95	
Paid out	1,193.63	

Basket Ball		85.63
Receipts	300.70	
Paid out	386.33	
	<hr/>	
Dramatics		109.65
Receipts	648.85	
Paid out	539.20	
	<hr/>	
Lyceum Course		307.55
Receipts	229.00	
Paid out	536.55	
	<hr/>	
Musicals		218.98
Receipts	444.15	
Paid out	663.13	
	<hr/>	
Debating		263.85
Receipts . . . . .	.....
Paid out	263.85	
	<hr/>	
Base Ball		92.25
Receipts	1.50	
Paid out	93.75	
	<hr/>	
Track Team		91.55
Receipts	154.95	
Paid out	246.50	
	<hr/>	
Electric A.		
Receipts	209.25	
Paid out	209.25	
	<hr/>	
Flora Wilson Concert.....		47.00
Receipts	160.75	
Paid out	207.75	
	<hr/>	
Class and Society Parties....		
Receipts	390.00	
Paid out	390.00	
	<hr/>	

Receipts from Bleachers.....	86.04	
Gift from Hyrum Hayball...	5.00	
Sale of Student Body Constitu- tions	2.75	
General Expense of Association as follows:.....	651.76	
Furnishing Student Body		
Office	123.00	
Student Body banner.....	46.34	
A. Sweaters purchased....	241.95	
Clean up day lunch.....	20.40	
Entertaining visiting teams, etc.	42.97	
Postage, stationery and misc. expense	76.60	
A. H. Upham (Old Student Life Loan repaid).....	35.00	
Banquet (Band and S. B. Officers)	52.00	
Gold A Pins awarded.....	13.50	
<hr/>		
Old Balance from old Athletic Association	.71	
Appropriation to U. A. C. Gymnasium....		500.00
Sinking Fund (Savings Bank).....		500.00
Balance on hand.....		102.90
		<hr/>
		\$3,806.31 \$3,806.31

Each student is charged an admission fee of \$5.00 on entering school. This entitles him to admission to all Student Body affairs, and also subscription to the College papers.

The fund is also used to pay the expenses of such non-revenue producing affairs as Inter-Collegiate Debates, etc. This was formerly done by popular subscriptions.

The above reports were made up from the books on file at this office. Duplicate receipts for all moneys received and proper vouchers for all expenditures are also on file at this office.

Very respectfully submitted,

JOHN L. COBURN.

Financial Secretary.

THE LIBRARY OF THE

MAR 9 1931

UNIVERSITY OF ILLINOIS.

UNIVERSITY OF ILLINOIS-URBANA



3 0112 112032245